Pencoedtre High School, Barry

Transport Assessment

Vale of Glamorgan Council

Project number: 60610283

September 2019

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
V1	16.08.2019	PAC submission	MD	Matt Davies	Senior Consultant
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1. Introduction

1.1 Introduction

1.1.1 AECOM has been appointed through the design and assessment stages of the school project providing advice on the overall scheme through to RIBA Stage 2; this includes scoping discussions and baseline desk studies. An assessment of the current highway network has been undertaken, along with the commissioning of traffic surveys across the network.

1.1.2 Furthermore, AECOM has been commissioned by the Vale of Glamorgan (VoG) to provide transport planning and highways advice to inform a planning application for the proposed new development of Pencoedtre High School (PHS).

1.1.3 AECOM liaised with the VoG, in their role as the Local Highway Authority (LHA), during a scoping exercise for the Transport Assessment (TA). A Scoping Note was prepared and sent to the LHA to gain an understanding of the level of assessment required for the TA. The LHA provided a response and some further recommendations, where the suggested additions or changes in approach were taken on board, wherever possible. A copy of the final agreed scoping report is included at **Appendix 1.1**, together with the exchange that took place informing the final document

1.2 Site Location and Existing Usage

1.2.1 The site is situated in Barry, within the VoG. It lies to the south of the A4050, around 3km to the northeast of Barry Town Centre. Cardiff and Cowbridge lie approximately 16km and 21km to the northeast and west respectively. Residential areas are located to the east, south and west. Barry Rugby Football Club (BRFC) is located immediately to the south of the site. The location of the site and the surrounding area is shown on **Figure 1.1**.

1.2.2 The site is occupied by the existing PHS (formerly known as Bryn Hafren Comprehensive School, an all-girls school) and associated playing fields and sports pitches. PHS is now a co-educational school.

1.2.3 Other schools located to the southwest have recently submitted planning applications or received planning consent are as follows:

- Whitmore High School (WHS) (formerly known as Barry Comprehensive School, an all-boys school) – construction of a replacement secondary school building with associated playing fields and parking at the site of the existing WHS and the demolition of the existing secondary school building upon completion (Reference: 2019/00435/RG3). This application is currently under consideration; and
- Ysgol Gymraeg Bro Morgannwg (YGBM) – erection of extensions to the school and other works (Reference: 2019/00280/RG3). This application was consented in June 2019.

1.3 Proposed Development

1.3.1 The existing school, rebranded as PHS, currently has 846 pupils enrolled (at the time of the traffic surveys) with a permitted total capacity of 1,331 pupils. The existing staff numbers are a total of 78, with 53 being teaching staff and 25 being non-teaching staff.

1.3.2 The new school is expected to open in 2021, with up to 1,100 pupils enrolled, of which up to 200 will be sixth form students. Pupil numbers are expected to steadily increase until full capacity is reached in 2026, at which point the school will enrol up to 1,250 pupils, of which up to 200 will be sixth form students. The number of staff is expected to increase in accordance with pupils to 150, with 105 being teaching staff and 45 being non-teaching staff.

1.3.3 In terms of transport, the proposals include:

- Improved footway to accommodate shared pedestrian and cyclist use;
- Reconfiguration of internal access junction to remove circulatory parking on roundabout island;

- Formal bus/coach drop-off and pick-up bays with pupil holding areas; and
- Minibus parking for school travel transport and also for school time events.

1.3.4 This TA will address the transport planning inputs required to inform the planning application and has been informed by meetings and discussions with the Local Education Authority (LEA) and recommendations by the LHA via a risk assessment undertaken in November 2015 (contained in **Appendix 1.2**). The scale of the proposals and the recommendations made by the LHA suggest that a TA is an appropriate report to document the transport planning inputs. It should be noted that the school will continue to operate within the current maximum consented pupil level and this will be discussed later in this report.

Further discussions with the LHA, undertaken through the Pre-Application Consultation (PAC) process has further informed the design. The TA has been updated to reflect these discussions

1.4 Report Structure

1.4.1 The TA examines the existing transport and highway issues relating to the proposed development. It considers the expected travel demand and also investigates methods of limiting car based travel to produce a sustainable development in line with national and local planning guidance.

1.4.2 The TA is structured as follows:

- **Section 2 – Existing Situation and Site Accessibility**: Examines the local transport conditions in the vicinity of the site and the accessibility of the site to non-car modes of travel;
- **Section 3 – Development Proposals**: Provides a detailed description of the development proposals, including the proposed means of access and parking provision;
- **Section 4 – Planning Policy Review:** Considers the development in the context of relevant national and local planning and transport policies;
- **Section 5 – Trip Generation and Distribution:** Sets out the existing/forecast trip generation for all modes of travel and method of trip distribution for the proposed development;
- **Section 6 – Assessment Scenarios:** Sets out the scenarios for assessment including how traffic flows for these scenarios have been derived;
- **Section 7 – Traffic Impact Assessment:** Examines the impact of the development proposals on the highway network during the weekday AM and PM peak hours;
- **Section 8 – Transport Implementation Strategy:** Details the key measures recommended to encourage sustainable travel; and
- **Section 9 – Conclusions:** Summarises the key findings and conclusions of the TA.

2. Existing Situation and Site Accessibility

2.1 Introduction

2.1.1 This section of the TA provides a description of the site location and its existing usage, the local highway network, current safety and traffic conditions, and accessibility to non-car modes of travel.

2.2 Site Location and Existing Usage

2.2.1 The site is situated in Barry, within the VoG. It lies to the south of the A4050, around 3km to the northeast of Barry Town Centre. The site is occupied by the existing PHS and associated playing fields and sports pitches. Residential areas are located to the east, south and west. BRFC is located immediately to the south of the site. The location of the site and the surrounding area is shown on **Figure 1.1**.

2.3 Local Highway Network

2.3.1 The local highway network is shown on **Figure 1.1**. The site is accessed via Merthyr Dyfan Road (MDR) to the west. The access road from MDR is around 125m in length and has a minimum carriageway width of 5.5m. The access road provides access to a roundabout at the school entrance. The school car park is accessed from this junction; parking is also provided on and around the junction and subsequently it forms a turning circle for vehicles. There is a continuous footway on the south side of the carriageway of 2m minimum width. The roundabout has a footway bisecting through its centre to facilitate pedestrian movements from the car park. There is no designated crossing location from the roundabout to the school entrance.

2.3.2 There is a continuous footway on the south side of the carriageway of the site access road, which is of 2m minimum width. There is also a footway on the north side of the carriageway, which terminates around 50m east of MDR. The access road is subject to a 30mph speed limit and street lighting is provided.

2.3.3 The access road forms a priority junction with MDR; MDR forms the major arms and the access road forms the minor arm. The junction incorporates a ghost island right-turn lane for movements from the southern arm of MDR to the site access; there is storage within this facility for up to for up to six vehicles. There are crossing facilities located immediately to the north and south of the junction. The northern crossing is uncontrolled, comprising dropped kerbs, tactile paving and a central refuge island, allowing for crossing movements to be undertaken in two stages, if required. The southern crossing is signal-controlled. The proximity of this to the site access not only has a benefit in terms of providing for controlled crossing movements on pedestrian desire lines, but also in terms of junction operation, creating gaps in northbound traffic, thereby facilitating northbound exit movements from the site access.

2.3.4 MDR routes on a north-south alignment between the A4050 and Skomer Road, primarily serving surrounding residential areas. It is a single carriageway road, which has a minimum carriageway width of 6.5m. There is some localised widening of up to 9m, but this typically includes hatching and on-street parking (through either marked bays or informal arrangements) such that the typical effective carriageway width is 6.5m. There are footways on both sides of the carriageway of 2m minimum width. The road is subject to a 30mph speed limit and street lighting is provided.

2.3.5 Winston Road is a residential street served via MDR, and provides access to other residential areas. Its junction with MDR is located approximately 100m south of the school access and is subject to a 20mph zone along its entire length, accompanied by traffic calming.

2.3.6 MDR connects to the A4050 at a signal-controlled junction located around 200m north of the site access. The A4050 forms the eastern and western arms of the junction, and MDR forms the southern arm. The junction incorporates signal-controlled pedestrian crossings on the eastern and southern arms.

2.3.7 The A4050 is one of the key highway links in the wider area. It provides a connection between the A48 and A4232 at Culverhouse Cross (Cardiff) to the north and the A4226 to the southwest (which serves Cardiff Airport and also provides a connection to the A48). It also connects with the A4231 to the east, which provides access to industrial land to the southeast.

2.3.8 The A4050/A4226 corridor within Barry is a single carriageway road subject to a 40mph speed limit, which is enforced through speed cameras. There is a shared footway/cycleway on the south side of carriageway, with crossing facilities provided on side roads. There is also footway on the north side of the carriageway along most of the corridor, with non-provision generally limited to the section east of MDR. Other key junctions along the corridor and not already referenced in the preceding paragraphs include the A4050/A4231, A4050/A4226 and A4226/B4266 roundabouts junctions, and the A4050/Stirling Road signal-controlled junction.

2.4 Highway Operational Conditions

Traffic Surveys

2.4.1 A number of traffic surveys have been undertaken to establish the operational conditions on the local highway network. These have included locations directly related to the highway network in the immediate vicinity of the site. Data from other locations surveyed as part of wider work in the area have also been included.

2.4.2 An independent survey company was commissioned to undertake Junction Turning Count (JTC) surveys. These were undertaken between the hours of 07:00-10:00 and 14:00-18:00 on Wednesday 27th June 2018. The locations of surveyed junctions are shown on **Figure 2.1** and are as follows:

- A4050/MDR signal-controlled junction;
- MDR/PHS access priority junction;
- A4050/A4426 roundabout;
- A4050/access road serving Barry Hospital and YGBM signal controlled junction;
- Barry Hospital access/YGBM access priority junction;
- A4050/Barry Road mini-roundabout junction;
- A4226/entrance to WHS/Barry Fire Station crossroads junction; and
- A4226/exit from WHS/Stirling Road signal-controlled junction.

2.4.3 From analysis of traffic movements to/from the site access, it was identified that the weekday AM and PM peak hours are 07:45-08:45 and 14:45-15:45 respectively; this corresponds with the morning drop-off/afternoon pick-up periods. The observed traffic flows on the surveyed network during these time periods are shown on **Figures 2.2** and **2.3**. The traffic flows on the key highway links in the vicinity of the site are summarised in **Table 2.1**.

Table 2.1: Summary Weekday Traffic Flow Information

Link No. and Description		Direction	AM Peak Hour (07:45-08:45)		PM Peak Hour (14:45-15:45)	
			Total Vehicles	HGV%	Total Vehicles	HGV%
1	MDR, south of MDR/PHS access priority junction	NB	326	1%	209	2%
		SB	246	2%	189	1%
		Two-Way	**572**	**1%**	**398**	**1%**
2	PHS access	EB	225	1%	18	17%
		WB	168	2%	72	7%
		Two-Way	**393**	**2%**	**90**	**9%**
3	MDR, north of MDR/PHS access priority junction	NB	247	2%	252	4%
		SB	224	3%	178	2%
		Two-Way	**471**	**2%**	**430**	**3%**
4	A4050, east of A4050/MDR signal-controlled junction	EB	806	6%	857	4%
		WB	755	8%	878	4%
		Two-Way	**1,561**	**7%**	**1,735**	**4%**
5	MDR, south of A4050/MDR signal-controlled junction	NB	257	2%	261	3%
		SB	220	3%	182	2%
		Two-Way	**477**	**2%**	**443**	**2%**
6	A4050, west of A4050/MDR signal-controlled junction	EB	862	6%	878	4%
		WB	848	7%	978	4%
		Two-Way	**1,710**	**7%**	**1,856**	**4%**
7	A4050, east of A4050/A4226 roundabout junction	EB	876	6%	934	4%
		WB	850	7%	957	4%
		Two-Way	**1,726**	**7%**	**1,891**	**4%**
8	A4050, south of A4050/A4226 roundabout junction	NB	503	6%	621	3%
		SB	562	4%	623	1%
		Two-Way	**1,065**	**5%**	**1,244**	**2%**
9	A4226,west of A4050/A4226 roundabout junction	EB	885	5%	826	3%
		WB	800	7%	847	5%
		Two-Way	**1,685**	**6%**	**1,673**	**4%**

2.4.4 **Table 2.1** shows that the A4050 and A4226 carry the highest volumes of traffic of the examined highway links during the AM and PM peak hours. The PHS access carries up to 400 vehicles during the AM peak hour, but only 90 vehicles during the PM peak hour; a higher level of traffic during the AM peak hour is not unusual given pupil and staff arrivals are likely to occur concurrently during this period, whereas staff departures typically occur following pupil departures during the PM peak hour. The differences may also indicate that pupils dropped off by car during the AM peak hour use other transport modes during the PM peak hour.

2.4.5 The population of PHS and other schools in the area (that have recently submitted planning applications or received planning consent) is summarised in **Table 2.2**; this is important to identify as it informs trip generation forecasts (see **Section 5**) and associated traffic impact assessment (see **Section 8**).

Table 2.2: School Population Information at Time of Traffic Surveys (June 2018)

School	Pupils		No. of Staff
	Type	No.	
PHS	Secondary	698	-
	Sixth Form	148	-
	Total	**846**	**78**
WHS	Secondary	796	-
	Sixth Form	109	-
	Total	**905**	**89**
YGBM	Primary/Secondary	1,015	-
	Sixth Form	118	-
	Total	**1,133**	**109**

On-Site Observations

2.4.6 A site visit was undertaken during the morning drop-off/afternoon pick-up periods on Tuesday 20th November 2018. The operation of the school in terms of pupil and vehicle movements was observed.

2.4.7 As stated in paragraph 2.3.3, the school access road forms a priority junction with MDR, with the incorporation of a ghost island right-turn lane for movements from the southern arm of MDR into the site. Paragraph 2.3.1 states that the access road is around 125m in length and has a minimum carriageway width of 5.5m. The access road provides access to a roundabout at the school entrance. The school car park is accessed from this junction. Parking is also provided on and around the junction and subsequently it forms a turning circle for vehicles.

2.4.8 The vehicular operation of the school during both the start and finish times of the school appeared to be within what would normally be classed as acceptable, with minimal cause for concern. In November 2015, the VoG undertook a risk assessment of the school access road and roundabout to observe the traffic behaviour during school drop-off/pick-up times. A number of issues were identified at this time, along with a number of recommendations. The VoG risk assessment is contained in **Appendix 1.2.**

2.4.9 The risk assessment noted a number of measures that the school were already undertaking to minimise the perceived issues. As identified in the risk assessment, staff members were observed, on the site visit, to be patrolling the area during the school finishing time.

2.4.10 A member of staff was located at the school entrance; their function was stopping pupils crossing the road to walk along the footpath dissecting the roundabout (as there is no safe crossing location for pedestrians at the opposite end of the roundabout).

2.4.11 A member of staff was located at the entrance to the overflow car park to ensure safe crossing for the pupils, with another member of staff stood in front of the first bus to ensure the buses wait for all pupils to board and to further ensure other pupils remain on the footways and do not walk in the carriageway.

2.4.12 During the morning drop-off period, there were conflicts between cars and buses trying to park in the bus bay. The VoG risk assessment recommends restricting parents from accessing the school and this TA further recommends this intervention.

2.4.13 During the afternoon pick-up period, parents were observed parking along MDR, which currently has no parking restrictions; this appeared to operate with minimal congestion issues or conflict between vehicles.

2.5 Road Safety

2.5.1 A review of PIC data has been undertaken to determine whether there are any locations on the local highway network which could be considered to exhibit a poor collision record. The data was obtained from the Welsh Government (WG) for the period from 1st January 2013 to 30th June 2018 (a 5½ year period, the most recent for which data was available).

2.5.2 A plan showing the location and severity of the PICs recorded is provided on **Figure 2.4**. The data supplied was in a raw format, containing full details of the recorded PICs. For data protection reasons, this data cannot be reproduced in this report.

2.5.3 A total of 20 PICs were recorded in study area over the study period, of which 16 were categorised as 'slight'. The remaining four PICs were recorded as 'serious'. No 'fatal' PICs were recorded in the study area. For ease of analysis the PICs have been separated into those occurring at junctions and on highway links in the study area. The following account of the events which led to a PIC was taken from the records provided.

PICs Recorded at Junctions

2.5.4 One 'slight' PIC was recorded on the A4050 at its junction with the access to a petrol filling station/car dealership. This involved a rear-end shunt between a car travelling southwest-bound and a car waiting to turn right into the access.

2.5.5 Three 'slight' PICs were recorded at the A4050/MDR signal-controlled junction. These involved a car travelling southeast-bound losing control and colliding with two cars travelling northwest-bound; a rear-end shunt between two cars travelling northeast-bound; and rear-end shunt between a motorcycle and car travelling northeast-bound.

2.5.6 One 'slight' PIC was recorded at the Winston Road/Winifred Avenue priority junction. This involved car travelling northeast-bound colliding with a pedal cycle travelling southwest-bound that was turning right, following which the car collided with a parked car.

2.5.7 One 'serious' PIC was recorded at the Skomer Road/MDR priority junction. This involved a car turning right into the side road colliding with a motorcycle turning left into the side road.

2.5.8 Two 'slight' PICs were recorded at the Skomer Road/Ramsey Road priority junction. These involved a driver of a car travelling northeast-bound being dazzled by the sun, colliding with a bollard and rolling over; and a collision between a car and a pedal cycle crossing the road.

PICs Recorded on Highway Links

2.5.9 Two 'slight' PICS were recorded on the A4050, between the A4226 and MDR. These involved a rear-end shunt between three cars travelling southwest-bound in wet conditions; and a rear-end shunt between a car and motorcycle travelling northeast-bound in congested conditions.

2.5.10 One 'slight' PIC was recorded on the A4050, northeast of MDR. This involved a rear-end shunt between three vehicles (two cars, one van) travelling southwest-bound following driver distraction.

2.5.11 One 'serious' PIC was recorded on MDR, between Morningside Walk and Winston Road. This involved a head-on collision between a car travelling southbound and a car travelling northbound.

2.5.12 Two 'slight' PICs were recorded on Winston Road, between MDR and Winifred Avenue. These involved a car travelling eastbound colliding with a pedestrian and failing to stop; and a child pedestrian entering the carriageway and colliding with a motorcycle travelling northeast-bound.

2.5.13 One 'serious' PIC was recorded on Skomer Road, south of MDR. This involved a motorcycle travelling northbound losing control in wet conditions, causing the rider to dismount.

2.5.14 One 'slight' PIC was recorded on Skomer Road, west of Lystep Road. This involved a rear-end shunt between two cars travelling eastbound; this was reported as being due to brake failure.

2.5.15 Two 'slight' PICs were recorded on Skomer Road, east of Lydstep Road. These involved a driver of car travelling eastbound being dazzled by the sun and colliding with a raised island, and a child pedestrian entering the carriageway and colliding with a car travelling eastbound.

2.5.16 One 'serious' PIC was recorded on Ramsey Road. This involved a pedestrian entering the carriageway from between parked cars and colliding with a car travelling southwest-bound.

2.5.17 One 'slight' PIC was recorded on Skomer Road, east of Cwrt Pencoedtre. This involved a driver of car travelling southwest-bound being dazzled by the sun, colliding with a bollard and rolling over.

Summary

2.5.18 On the basis of this analysis it is affirmed that it can be concluded that there is no existing highway safety issue in the study area that would be exacerbated by the proposed development. The type, causation, dates and location of PICs does not suggest a particular pattern or correlation that would draw attention to any existing safety issues within the local study area.

2.6 Walking and Cycling

2.6.1 As identified in **Section 2.4**, the local area to the site provides a network of footways and cycleways and pedestrian/cycle infrastructure which facilitate active travel for users of the site.

2.6.2 There are generally footways on both sides of the site access road serving PHS, and MDR, the A4050 and A4226. There is also shared footway/cycleway along the A4050/A4226 corridor. Street lighting is provided. Crossing movements are facilitated through the provision of both controlled and uncontrolled crossing facilities.

2.6.3 The site access road is around 125m in length with a continuous footway on the south side of the carriageway of 2m minimum width and a footway on the north side of the carriageway, which terminates around 50m east of MDR. There are no dropped kerbs or tactile paving at this point nor at the access junction, to facilitate pedestrian movements.

2.6.4 The surrounding residential areas generally have footways on both sides of the carriageway and have street lighting. However, along MDR and at junctions with residential streets, there are dropped kerbs but no tactile paving. This is evident at the junction with Morningside Walk, which is approximately 20m south of the site access, and Winston Road, which is subject to a 20mph zone and traffic calming for its entire length.

2.7 Local Facilities

2.7.1 The Institution for Highways and Transportation's (IHT's) *Guidelines for Providing for Journeys on Foot*, published in 2000, identifies that 2km is the preferred maximum distance that people will walk for commuting and education purposes. Cycling has been identified as having the potential to replace car trips of up to 5km. The travel distance of 5km equates to approximately a 20 minute journey by bicycle.

2.7.2 **Figure 2.5** shows a 2km walking catchment from the site**.** From a pupil and staff perspective, this is primarily related to the distance travelled from their place of residence. This shows that there is a significant level of residential development within walking distance. Areas beyond this and located in Barry are within cycling distance.

2.7.3 It is also important for other day-to-day facilities such as retail and health facilities to be within walking and cycling distance. The distance and indicative walking/cycling times to these facility types are set out in **Table 2.3** and the locations of the facilities shown on **Figure 2.5**. This shows there is a range of retail and health facilities within active travel distances of the site.

Table 2.3: Accessibility to Local Facilities

	Local Facilities	Walking Accessibility		Cycling Accessibility	
		Distance (m	Time (Minutes)	Distance (m)	Time (Minutes)
1	Costcutter/Post Office (MDR)	250m	3 minutes	250m	1 minute
2	Premier Convenience Store (Skomer Road)	1,000m	12 minutes	1,000m	3 minutes
3	Vale Family Practice (Ramsey Road)	1,200m	14½ minutes	1,200m	3½ minutes
4	One Stop Convenience Store (Winston Road)	1,400m	16½ minutes	1,400m	4 minutes
5	Lidl Supermarket (A4231)	2,300m	27½ minutes	2,300m	7 minutes
6	Barry Hospital	1,900m	22½ minutes	1,900m	6 minutes
7	Highlight Park Medical Practice (Stirling Road)	2,400m	28½ minutes	2,400m	7½ minutes
8	Tesco Supermarket (Stirling Road)	2,500m	30 minutes	2,700m	8 minutes
9	Barry Town Centre	3,700m	44 minutes	3,800m	11 minutes

Note: Distances are approximate and measured from the centre of the site and along existing footways and cycleways.

2.8 Public Transport

Introduction

2.8.1 Existing public transport services operating in the vicinity of the site have been identified with reference to current timetable and routeing information.

Bus Services

2.8.2 The nearest bus stops to the site are the 'Barry Rugby Club' bus stops on MDR, located approximately 400m southwest of the site, equating to a 5 minute walk. The northbound bus stop comprises a pole-mounted flag and bus shelter. The southbound bus stop is marked by a pole-mounted flag. The locations are shown on **Figure 2.5**.

2.8.3 The IHT's *Guidelines for Providing for Public Transport in Developments*, published in 1999, suggests 400m as the acceptable walking distance to a bus stop. These bus stops are therefore considered to be of acceptable walking distance from the site.

2.8.4 **Table 2.4** provides a summary of bus services accessed from these bus stops.

Table 2.4: Bus Service Information

Service	Route	Direction	Days	First Service	Last Service	Approximate Frequency
97/97A	Barry – Barry	Clockwise	Mon-Fri	07:46	16:26	30 minutes
			Sat	09:16	15:46	30 minutes
		Anticlockwise	Mon-Fri	08:06	17:16	30 minutes
			Sat	09:36	16:06	30 minutes
100	Merthyr Dyfan – Highlight Park (via Barry)	Towards Highlight Park	Sun	11:31	19:01	90 minutes
		Towards Merthyr Dyfan	Sun	12:49	20:19	90 minutes

Notes:

1. *Information obtained from Traveline Cymru (July 2019).*
2. *Service times are arrival/departure times at/from the 'Barry Rugby Club' bus stops on MDR.*
3. *Services 97/97A and 100 are operated by Cardiff Bus.*

2.8.5 **Table 2.4** shows that the 97/97A offers frequent weekday services; this serves numerous residential areas and key destinations within Barry, including the hospital, town centre and railway stations. The route is shown on **Figure 2.6**.

Figure 2.6: Route of Bus Service 97/97A

Source: Traveline Cymru.

2.8.6 In addition to these services, there are numerous school transport services that provide specifically for pupil travel to/from the site. These are as follows:

- S1 – From East Aberthaw, Rhoose and Rhoose Point;

- S3 – From Barry Island;
- S10 – From Holton Road via Barry (also serves WHS and YGBM); and
- S14 – From Broad Street, Barry (also serves WHS).

Rail Services

2.8.7 There are four railway stations serving Barry; these are Barry, Barry Island, Barry Docks and Cadoxton. All stations are located on the Barry Branch line between Cardiff Central and Barry Island. Barry is also the rail junction at the start of the VoG line which serves Rhoose and Llantwit Major and terminates at Bridgend.

2.8.8 The nearest station to the site is Cadoxton; this is located approximately 2.6km walk (equating to 31 minutes) or 2.8km cycle (equating to 8½ minutes) to the southeast of the site. The station is managed by Transport for Wales. **Table 2.5** provides a summary of the rail services accessed from Cadoxton.

Table 2.5: Railway Service Information

Direction	Days	First Service	Last Service	Approximate Frequency
Cardiff Central – Cadoxton	Mon-Fri	05:20	23:31	15 minutes
	Sat	05:20	23:30	15 minutes
	Sun	08:24	22:25	15-30 minutes
Cadoxton – Cardiff Central	Mon-Fri	05:25	23:21	15 minutes
	Sat	05:25	23:21	15 minutes
	Sun	09:11	23:06	15-30 minutes
Cadoxton – Bridgend	Mon-Fri	05:57	22:59	60 minutes
	Sat	05:57	21:57	60 minutes
	Sun	08:57	20:57	120 minutes
Bridgend – Cadoxton	Mon-Fri	06:21	23:21	60 minutes
	Sat	06:21	23:21	60 minutes
	Sun	10:21	22:21	120 minutes

Notes:

1. *Information obtained from National Rail timetable (July 2019).*
2. *Services times are arrival/departure times for direct services at/from Cadoxton.*

2.8.9 **Table 2.5** shows that regular services to key destinations are accessible from Cadoxton railway station. Barry railway station provides access to the same services; while this is further from the site (an additional 1km), it has a greater level of facility provision in terms of cycle parking, staffing presence and waiting areas, and can also be accessed via the 97/97A bus service.

2.8.10 The site is considered to have a good accessibility via railway services. The provision of direct services is a considerable benefit to encouraging sustainable travel for site users and an alternative to travelling by vehicle.

2.9 Summary

2.9.1 The site is situated in Barry, within the VoG. It lies to the south of the A4050, around 3km to the northeast of Barry Town Centre. The site is occupied by the existing PHS and associated playing fields and sports pitches. Residential areas are located to the east, south and west. BRFC is located immediately to the south of the site.

2.9.2 The local highway network to the site includes the PHS access road, MDR, the A4050 and A4226. Traffic surveys have been undertaken to identify existing operational conditions and to inform the traffic impact assessment. These have identified the two-way traffic flows on the key links in the study area during the weekday AM and PM peak hours as follows:

- PHS access: 400 vehicles during the AM peak hour and 90 vehicles during the PM peak hour;
- MDR: 400-600 vehicles per peak hour;
- A4050 (east of the A4226): 1,600-1,900 vehicles per peak hour;
- A4050 (south of the A4226): 1,100-1,200 vehicles per peak hour; and
- A4226: 1,700 vehicles per peak hour.

2.9.3 PIC data has been obtained from the WG for the period from 1st January 2013 to 30th June 2018 (a 5½ year period, the most recent for which data was available). A total of 20 PICs were recorded in study area over the study period, of which 16 were categorised as 'slight'. The remaining four PICs were recorded as 'serious'. No 'fatal' PICs were recorded in the study area. On the basis of the analysis it is affirmed that it can be concluded that there is no existing highway safety issue in the study area that would be exacerbated by the proposed development. The type, causation, dates and location of PICs does not suggest a particular pattern or correlation that would draw attention to any existing safety issues within the local study area.

2.9.4 The site benefits from existing provision for pedestrians and cyclists in the locality; this includes footways on both sides of the majority of roads surrounding the site, with some allowing for shared use. Local facilities are located within walking and cycling distance of the site.

2.9.5 Bus services are accessible from bus stops located on MDR, which are within the IHT's suggested 'acceptable' walking distance. These provide access to a frequent weekday service that serves numerous residential areas and key destinations within Barry, including the hospital, town centre and railway stations. There are also numerous school transport services that provide specifically for pupil travel to/from the site.

2.9.6 Rail services are available from numerous railway stations in Barry, the nearest being Cadoxton. This provides accesses to high frequency services to/from Cardiff Central (every 15 minutes on weekdays) and reasonable frequency services to/from Bridgend (every hour on weekdays). Barry railway station provides access to the same services; while this is further from the site, it has a greater level of facility provision in terms of cycle parking, staffing presence and waiting areas, and can also be accessed via bus services. Overall, the site is considered accessible by sustainable modes.

3. Development Proposals

3.1 Introduction

3.1.1 This section of the report provides a description of the development proposals, including the site access strategy.

3.2 Overview of Proposals

3.2.1 The existing school, rebranded as PHS, currently has 846 pupils enrolled (at the time of the traffic surveys) with a permitted total capacity of 1,331 pupils. The existing staff numbers are a total of 78, with 53 being teaching staff and 25 being non-teaching staff.

3.2.2 The proposals seek to develop a full new school facility on the same wider school site. The new school is expected to open in 2021, with up to 1,100 pupils enrolled, of which up to 200 will be sixth form students. Pupil numbers are expected to steadily increase until full capacity is reached in 2026, at which point the school will enrol up to 1,250 pupils, of which up to 200 will be sixth form students. The number of staff is expected to increase in accordance with pupils to 150, with 105 being teaching staff and 45 being non-teaching staff.

3.2.3 The masterplan is shown at **Appendix 3.1**.

3.3 Access Strategy

Vehicle Access

3.3.1 The site will continue to be served off MDR; this includes for all modes, i.e. vehicles, pedestrian and cyclists. The current vehicle activity on this access road includes teachers, parents dropping off and collecting pupils, school bus services and service vehicles. Parent vehicles and buses park within the internal junction with spaces provided on the roundabout island and around the circulatory. This current arrangement has caused concern from the LHA and has been the subject of safety assessments in the past.

3.3.2 To improve the current arrangement, the masterplan has considered the needs of the future school and the best use of the available space. This has resulted in a redesign of the internal access arrangements to include some minor improvement works.

3.3.3 It has been confirmed that the school will not be operating four bus services at the time of the new school opening. The ongoing adjustments to pupil catchment area and policy on pupil travel provision will result in two school buses being required and potentially a minibus. This future service requirement has helped to formulate a rationalisation of the junction and parking provision.

3.3.4 The school catchment area has changed, in part due to the transition from single sex to co-education, this has resulted in a reduction from four school buses to two school buses and a mini bus. During a meeting on 21st August, the LPA and LHA requested further supporting information to substantiate the future reduction in school bus provision. A short note has been produced to provide further justification on this matter, this has been included as **Appendix 3.2**. The parking provision which currently exists on the roundabout requires reversing movements which are contrary to the circulation of a roundabout junction. This was deemed one of the areas of most conflict within the current layout. This parking provision is therefore proposed to be removed. The roundabout island will be set out in a more uniform shape and the infill areas hatched out. The existing circulatory parking also currently contributes to congestion and multi-direction conflict opportunities, and this has therefore been reduced to provide two bus parking bays and a minibus parking bay. The masterplan illustrates this area to the east of the roundabout and includes the areas which are needed for manoeuvring by PSV vehicles, shown in hatch road markings. These areas will be monitored to ensure that they remain free for intended use. As part of these proposals, it is also proposed to remove the existing footpath which bisects the roundabout island; this serves parking areas and future use would be discouraged given that all pupil movements will be contained to the south of the junction, which are more direct.

3.3.5 The location of these bus bays ensures the shortest transition from bus drop off to the school entrance with now crossings or further interaction with the carriageway required. This location also provides adequate areas for pupil holding and waiting should buses be delayed at the end of the school day. The access arrangement improvements can be seen more clearly in the layout included at **Appendix 3.3**.

3.3.6 Swept Path Analysis (SPA) has been undertaken of the proposed bus bay pick-up/drop-off point, as shown in **Appendix 3.4**. Based on information provided by the Client team, a mix of coaches and minibuses will serve this area; therefore, SPA was undertaken using a 15m coach. The SPA indicates that the current design adequately accommodates the manoeuvring of a 15m coach and parking in each of the two bays and a minibus in the northern most allocated space

3.3.7 SPA was also undertaken of a fire tender vehicle, refuse vehicle and service vehicles entering school grounds, turning and exiting in a forward manoeuvre. These are also included in **Appendix 3.4**.

3.3.8 General staff parking will be provided to the north of the building cluster. This car park includes all the parking requirements for the school including cycle, motorcycle, staff and visitor cars and minibus. The design of the pedestrian area to transfer from the mobility parking areas will ensure that it is flat and easy to access.

Pedestrian and Cycle Access

3.3.9 It is proposed that pupils and visitors of all abilities shall be able to easily enter into and move through the landscape and each space within it, via level or ramped entry points where necessary.

3.3.10 The current access arrangements will be retained with minor modifications, where necessary, to improve the current footway to a shared cycle/footway facility. The proposed width of the facility will be 3m; this width will be provided from the access with the local highway through to the school. The footway proposals will include a crossover at the location of the entrance to the caretaker's property, south of the roundabout. Traffic calming measures will be included along the access road, including a pedestrian crossing where the northern footway terminates.

3.3.11 Where this shared facility crosses the internal access service road, dropped kerbs and tactile paving will be provided. The access arrangement improvements can be seen more clearly in the layout included at **Appendix 3.3**.

3.3.12 The masterplan confirms that there is an opportunity to link with the footpath to the south to provide a link to the school building. The other areas of the wider school site will be accessible with internal footpaths and where required shallow gradient ramps to aid those with mobility issues.

3.4 Parking Provision

Car Parking

3.4.1 The VoG parking standards are set out in Supplementary Planning Guidance (SPG) to the adopted Local Development Plan (LDP); the SPG was adopted in March 2019.

3.4.2 The SPG sets out the VoG's parking standards and explains the planning policy for parking requirements for new developments or changes of use. The parking standards seek to promote and ensure transparent and consistent approaches to the provision of parking. In addition to this, it helps to inform developers and designers what is expected of them in terms of sustainability considerations and travel planning.

3.4.3 The standards are defined according to a zoning system, with the site falling within Zone C - Suburban. **Table 3.1** summarises the car parking standards in the SPG and their application to the proposed development at full capacity.

Table 3.1: VoG Car Parking Standards Applied to Proposed Development

Type	Sub-Category	Standard	Maximum Provision
Operational	Commercial Vehicle Space	1 space	1
		Total	**1**
Non-Operational	Teaching Staff	1 space per each member of teaching staff	102
	Ancillary Staff	1 space per two ancillary staff	24
	Students aged 17+	1 space per 20 students aged 17+	10
	Visitors	3 spaces	3
		Total	**139**

Note: Standards are for the 'Education – Secondary Schools & Colleges of Further Education' use type in the SPG.

3.4.4 **Table 3.1** shows that, in terms of operational parking, one commercial vehicle space is required; there is available space within the area outside the loading bay / adjacent to the refuse storage area (located in the southwest corner of the site). In regard to non-operational parking, the maximum provision permitted by the standards is 139 spaces. The SPG also states that disabled parking should account for 5% of the total parking provision; on the basis of the maximum provision permitted of 139 spaces, this equates to seven disabled bays. The proposed development provides a total of 139 spaces, of which eight are designated as disabled bays. The total provision is therefore in accordance with standards. The provision is spread across two adjacent areas; the eastern area provides nine spaces and the western area provides 130 spaces (including the eight disabled bays, in proximity to the main entrance).

Cycle Parking

3.4.5 **Table 3.2** summarises the cycle parking standards in the SPG and their application to the proposed development at full capacity.

Table 3.2: VoG Cycle Parking Standards Applied to Proposed Development

Cycle Parking Type	Standard	Required Provision
Short Stay	1 stand per 100 students	13
Long Stay	1 stand per 5 staff	30
	1 stand per 6 students aged 17+	33
	Total	**76**

Note: Standards are for the 'Education – Secondary Schools & Colleges of Further Education' use type in the SPG.

3.4.6 **Table 3.2** shows that a total of 76 cycle parking spaces are required. The masterplan shows a total of 76 cycle parking spaces (38 stands allowing for two spaces per stand), which is in accordance with standards.

3.4.7 The SPG states that cycle parking should be located in a safe, secure and convenient location and for reasons of security, cycle parking facilities should be located in areas that are visible and therefore allow for informal surveillance. The proposed cycle parking is located in the southwest corner of the western parking area, which is in proximity to the main entrance, and is therefore considered to be in accordance with standards.

3.4.8 The SPG also requires the provision of appropriate lockers, changing and shower facilities to support staff cycling trips; these facilities are included as part of the internal building design.

Motorcycle Parking

3.4.9 The SPG requires motorcycle parking to be provided at a level of 5% of the total car parking provision; this equates to a requirement for seven spaces. The masterplan shows a total of nine spaces, which is considered a reasonable level of provision. This will be located in the eastern parking area.

Coach and Minibus Parking

3.4.10 Parking for two coaches and a minibus is provided off the main roundabout within the site. Parking for two additional minibuses is provided in the eastern parking area.

3.5 Construction Traffic

3.5.1 Managing the construction effects will form part of the Construction Traffic Management Plan (CTMP) or similar document. The management measures will be intended to protect the environment, amenity and safety of local residents, businesses, the general public and the surroundings in the vicinity of the proposed development.

3.5.2 As part of the CTMP, a construction vehicle routeing regime for access to the construction site will be identified and agreed with the LHA to ensure that drivers of construction related vehicles do not use inappropriate routes which are unsuitable by virtue of their width, alignment or character. The CTMP will also consider measures to discourage deliveries during peak traffic periods on the highway network. There will ongoing monitoring of the CTMP during the construction phase to establish the effectiveness of the measures.

3.6 Summary

3.6.1 This section has provided a description of the development proposals, including the site access strategy.

3.6.2 The existing school, rebranded as PHS, currently has 846 pupils enrolled (at the time of the traffic surveys) with a permitted total capacity of 1,331 pupils. The existing staff numbers are a total of 78, with 53 being teaching staff and 25 being non-teaching staff.

3.6.3 The proposals seek to develop a full new school facility on the same wider school site. The new school is expected to open in 2021, with up to 1,100 pupils enrolled, of which up to 200 will be sixth form students. Pupil numbers are expected to steadily increase until full capacity is reached in 2026, at which point the school will enrol up to 1,250 pupils, of which up to 200 will be sixth form students. The number of staff is expected to increase in accordance with pupils to 150, with 105 being teaching staff and 45 being non-teaching staff.

3.6.4 The site will continue to be served off MDR; this includes for all modes, i.e. vehicles, pedestrian and cyclists. The proposed modifications to existing arrangements include:

- Improved footway to accommodate shared pedestrian and cyclist use;
- Traffic calming measures implemented along access road, with the inclusion of a pedestrian crossing to facilitate pedestrian movements where the northern footway terminates.
- Reconfiguration of internal access junction to remove circulatory parking on roundabout island;
- Formal bus/coach drop-off and pick-up bays for two coaches and one minibus, with pupil holding areas; and
- Minibus parking for school travel transport and also for school time events.

3.6.5 Car, cycle and motorcycle parking will be provided in accordance with adopted standards. In summary this includes 139 car parking spaces (of which eight are designated as disabled bays), 76 cycle parking spaces and nine motorcycle parking spaces. Parking for two coaches and a minibus is provided off the main roundabout within the site. Parking for two additional minibuses is provided in the eastern parking area.

4. Planning Policy Review

4.1 Introduction

4.1.1 This section of the report provides a review of existing planning and transport policies at a national and local level, which are considered to be relevant to the proposed development.

4.2 National Policy

Planning Policy Wales Edition 10, December 2018

4.2.1 Edition 10 of *Planning Policy Wales* (PPW) was published in December 2018 and sets out the land use planning policies of the WG. It is supported by a number of Technical Advice Notes (TANs), which provide detailed planning advice on subjects contained within PPW. *TAN 18: Transport* is considered of particular relevance to the proposed development and is included in this policy review. An overarching theme within PPW is the commitment of the WG to sustainability.

4.2.2 Planning policy in Wales is plan-led, with up to date Local Development Plans (LDPs) forming a fundamental part of the system. PPW states that planning applications *"must be determined in accordance with the adopted plan unless material considerations indicate otherwise"*. This section provides a review of the VoG LDP to demonstrate that the proposed development accords with policy.

4.2.3 PPW outlines the vision for development of a more effective and efficient transport system, the promotion of more sustainable and healthy forms of travel, as well as minimising the need to travel. PPW indicates that this will be achieved through integration:

- *"within and between different types of transport;*
- *between transport measures and land use planning;*
- *between transport measures and policies to protect and improve the environment; and*
- *between transport measures and policies for education, health, social inclusion and wealth creation."*

4.2.4 Paragraph 4.1.8 states that the WG is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health of the nation and realising the goals of the *Well-being of Future Generations (Wales) Act 2015*.

4.2.5 Therefore, the WG outlines a support for a transport hierarchy in relation to the accessibility of new development that prioritises walking and cycling in the first instance, followed by public transport, and finally private motor vehicles. This TA provides a number of measures to encourage sustainable travel with the view to reduce single occupancy car travel. These measures are set out at **Section 8** of this TA.

4.2.6 Paragraph 4.1.10 states:

"Development proposals must seek to maximise accessibility by walking, cycling and public transport, by prioritising the provision of appropriate on-site infrastructure and, where necessary, mitigating transport impacts through the provision of off-site measures, such as the development of active travel routes, bus priority infrastructure and financial support for public transport services."

4.2.7 Paragraph 4.1.50 states that car parking provision has a major influence on both mode choice and development patterns, and that *"minimum parking standards are no longer appropriate"*.

4.2.8 Paragraphs 4.1.56 to 4.1.57 identify the requirements for development proposals to be accompanied by a TA. It directs professionals to the TAN 18 for guidance on the preparation and content of TAs.

Technical Advice Note (TAN) 18: Transport (2007)

4.2.9 TAN 18 describes how to integrate land use and transport planning, and explains how transport impacts should be assessed and mitigated. It supports, and should be read in conjunction with, PPW.

4.2.10 The integration of land use and transport planning forms part of an overall sustainable development approach by the WG towards strategy and policy objectives. This is predominantly through maximising the accessibility of developments by sustainable modes of transport. This also includes reducing the need to travel and encouraging multi-purpose trips. Accessibility is defined in TAN 18 as *"the relative ability to take up services, markets or facilities"* (p.8).

4.2.11 The proposed development demonstrates a clear link between land use and transport planning, and is accessible by a range of sustainable transport modes. It provides opportunities to improve the walking and cycling infrastructure to the site, enhancing the potential for active travel.

4.2.12 Paragraph 4.6 states that parking standards for new development should be determined on an evidence basis which includes accessibility to other modes of transport. The proposed development provides parking in accordance with the SPG, as discussed at **Section 3**.

4.2.13 Section 5 requires all new development to be designed in a way that is inclusive for all. The design of the development also plays an important role in providing genuine alternatives to car travel. This includes sufficient cycle parking in close proximity to the school access, improving walking routes to the school such as the proposed shared footway/cycleway facility adjacent the access road and associated crossing improvements at the connecting internal roads. In addition to this, a further pedestrian access is proposed accessing the school from the southeast, with the addition of accesses via footpaths providing access to the residential site to the west and southeast of the site.

4.2.14 Section 7 considers the role that public transport can play in offering an alternative to car travel, giving emphasis to the provision of new services and facilities, as well as facilitating interchange, as methods of encouraging uptake. The development proposals include school bus transport; this has been taken as the future requirements of the new school resulting in two school buses and a minibus serving the school.

The Wales Transport Strategy (2008)

4.2.15 The *Wales Transport Strategy* (WTS) sets out the WG's main aims in improving transport:

- *"Reducing greenhouse gas emissions and other environmental impacts;*
- *Improving public transport and better integration between modes;*
- *Improving links and access between key settlements and sites across Wales and strategically important all-Wales links; and*
- *Increasing safety and security."*

4.2.16 As discussed in previous sections, the proposed development will improve integration between modes, facilitate use of existing public transport availability, enhance sustainable travel, and improve connectivity. It is therefore considered to be aligned with the WTS.

National Transport Finance Plan (2015)

4.2.17 The purpose of the *National Transport Finance Plan* (NTFP) is to:

- Provide the timescale for financing schemes undertaken by the WG;
- Provide the timescale for delivering these schemes and detail the estimated expenditure required to deliver the scheme; and
- Identify the likely source of financing to allow delivery to take place.

4.2.18 The NTFP is not a policy document nor does it seek to prioritise schemes to be taken forward. It brings together projects already being delivered. Some of these are already under construction. Others are already under development, but are not yet being built.

Active Travel (Wales) Act 2013

4.2.19 The *Active Travel (Wales) Act* became law in Wales in November 2013. The Act makes it a legal requirement for local authorities in Wales to map and plan for suitable routes for active travel, and to build and improve their infrastructure for walking and cycling every year. It also requires both the WG and local authorities to promote walking and cycling as a mode of transport.

4.2.20 The purpose of this Act is to require local authorities to continuously improve facilities and routes for pedestrians and cyclists and to prepare maps identifying current and potential future routes for their use. The Act also requires new road schemes (including road improvement schemes) to consider the needs of pedestrians and cyclists at design stage.

4.2.21 The Act is accompanied by a statutory design guidance document, published in December 2014, which provides advice on the planning, design, construction and maintenance of active travel networks and infrastructure, and is to be used at all stages of the process. Reference has been made to this guidance in the planning and design of the proposed development.

4.2.22 When carrying out its duties under the Act, the VoG will seek to address the transport issues in areas of inactivity within the 'Communities First' cluster area in Barry, as well as other centres of population This will be achieved by promoting transport schemes to improve sustainable transport infrastructure thereby enabling safe and affordable access to employment sites. 'Safe Routes in Communities' schemes will be promoted to provide effective and affordable transport services to enable the best opportunities to encourage active and safe travel.

Well-being and Future Generations (Wales) Act 2015

4.2.23 The *Wellbeing of Future Generations (Wales) Act 2015* has resulted in the WG outlining seven goals in a 'wellbeing statement' (published in 2017) that contribute to sustainable development and details the aims to improve economic, social, environmental and cultural wellbeing of Wales for future generations. The Act places a duty on Local Authorities to set wellbeing objectives and contribute to achieving the seven well-being goals, which are:

- A prosperous Wales;
- A resilient Wales;
- A healthier Wales;
- A more equal Wales;
- A Wales of cohesive communities;
- A Wales of vibrant culture and thriving Welsh language; and
- A globally responsible Wales.

4.2.24 The seven goals form the basis for twelve objectives, also detailed in the wellbeing statement. Several of these are directly relevant to this proposed scheme:

- Drive sustainable growth and combat climate change;
- Promote good health and well-being for everyone;
- Build healthier communities and better environments; and
- Deliver modern and connected infrastructure.

4.2.25 By improving sustainable transport infrastructure within the area surrounding the school, a mode shift away from car to walking, cycling and bus use will be encouraged. Sustainable transport will become more accessible and efficient allowing better connections between areas of leisure, employment and education whilst also encouraging growth. By creating an area that supports active travel the communities that use, the area will be healthier and have an improved environment to live and work and be educated in.

4.3 Local Policy

4.3.1 Planning legislation states that applications must be determined in accordance with the LDP unless material considerations indicate otherwise.

The Vale of Glamorgan Local Development Plan

4.3.2 The VoG LDP was updated in June 2017 and covers the period 2011-2026. The vision for the VoG is a place:

"That is safe, clean and attractive, where individuals and communities have sustainable opportunities to improve their health, learning and skills, prosperity and wellbeing; and

Where there is a strong sense of community in which local groups and individuals have the capacity and incentive to make an effective contribution to the future sustainability of the area."

4.3.3 In support of the social, economic and sustainable themes intrinsic to the LDP and Community Strategy Vision, ten key strategic objectives have been developed that set the context of the LDP Strategy. The strategic objective most appropriate to this scheme is:

- Objective 3: To reduce the need for VoG residents to travel to meet their daily needs and enabling them greater access to sustainable forms of transport.

4.3.4 The LDP further develops 'Strategic Policies' to underpin the LDP Strategy and further develops policies specifically relating to 'Managing Growth', 'Managing Development' in the VoG.

4.3.5 Strategic Policy SP7 (Transportation) states:

"Sustainable transport improvements that serve the economic, social and environmental needs of the Vale of Glamorgan and promote the objectives of the South East Wales Regional Transport Plan and the Local Transport Plan will be favoured"; and

"Priority will be given to schemes that improve highway safety and accessibility, public transport, walking and cycling. All new developments that have a direct impact on the strategic transportation infrastructure will be required to deliver appropriate improvements to the network".

4.3.6 The proposed development will include features to improve pedestrian safety within the site, such as dropped kerb and tactile paving crossings at the junctions with internal roads, removal of parking around the roundabout and bus parking areas connected directly with the school pedestrian approach inclusive of wide and safe pupil holding areas..

4.3.7 Policy MG6 (provision of Education Facilities) provides details of land allocations for specific school sites, however, it goes onto state that *"existing schools will be extended or improved to meet demand for school places during the plan period."*

4.3.8 Policy MG16 (Transport Proposals) has been designed to safeguard a number of transport schemes. In addition to this, it maintains a commitment to encouraging walking and cycling. It states:

"An essential element in encouraging an increase in walking and cycling is the provision of a network of high quality dedicated routes that link communities and provide access to local retail, employment and recreation opportunities. The LDP will seek to encourage and give priority to those proposals that enhance opportunities for walking and cycling".

4.3.9 The proposed development will encourage the increase of walking and cycling to the school through the proposed enhancements of the internal access arrangements for pedestrians and cyclists, along with the proposals for the improvement of the access road and roundabout. Furthermore, the introduction of a Travel Plan (TP) will further encourage sustainable travel to the school. More details on the proposed targets for mode change are contained in **Section 7** of this TA.

4.3.10 Policy MD2 (Design of New Development) states that development proposals should:

- *Provide a safe and accessible environment for all users, giving priority to pedestrians, cyclists and public transport users;* and

- *Have no unacceptable impact on highway safety nor cause or exacerbate existing traffic congestion to an unacceptable degree.*

4.3.11 In respect of this, the LDP states:

"All new development should be highly accessible. Walking and cycling have an important role to play in the management of movement across the area, particularly reducing the number of short trips taken by car. Developers will be required to ensure that new developments encourage walking and cycling by giving careful consideration to location, design, access arrangements, travel 'desire lines' through a development, and integration with existing and potential off-site links. Providing safe and convenient walking and cycling environments will help tackle health problems associated with physical inactivity and social exclusion factors arising from car dependency, poor access to services and public transport facilities."

The Vale of Glamorgan Local Transport Plan 2015-2030

4.3.12 The Local Transport Plan (LTP) seeks to identify the sustainable transport measures required to ensure the VoG adheres to current requirements and good practices to allow for a sustainable transport environment for the period 2015 to 2020 as well as looking forward to 2030. It therefore seeks ways to secure better conditions for pedestrians, cyclists and public transport users and to encourage a change in travel choices away from the single occupancy car.

4.3.13 As most journeys by car, particularly for shopping and school travel, are relatively short, better conditions for pedestrians and cyclists can lead to a reduction in car use. A reduction in car use can promote good health and well-being, reduce the negative impacts on the environment that car travel can bring, offer better access to services and facilities, which in turn can offer improved economic opportunities and reduce the potential for traffic accidents. Sustainable transport infrastructure and services are therefore an important feature of modern day life.

The Vale of Glamorgan Parking Standards

4.3.14 The VoG parking standards are set out in SPG to the LDP; the SPG was adopted in March 2019.

4.3.15 The SPG sets out the VoG's parking standards and explains the planning policy for parking requirements for new developments or changes of use. The parking standards seek to promote and ensure transparent and consistent approaches to the provision of parking. In addition to this, it helps to inform developers and designers what is expected of them in terms of sustainability considerations and travel planning.

4.3.16 The proposed development provides parking in accordance with the SPG, as discussed at **Section 3**.

4.4 Summary

4.4.1 This section of the report has provided a review of existing planning and transport policies at a national and local level that are considered relevant to the proposed development.

4.4.2 Planning law requires that applications for planning permission must be determined in accordance with the adopted LDP. The proposed development is considered to align with the objectives of the LDP.

4.4.3 The proposed development will facilitate opportunities for sustainable travel through the implementation of a TP, which is a requirement of the national and local policy. This forms part of the planning application submission.

4.4.4 The proposed development will comply with the national and local policy and guidance, with access to the site being safe and suitable for all users. The site is accessible via a range of sustainable modes including walking, cycling and public transport. In summary, the proposals comply with national and local policies.

5. Trip Generation and Distribution

5.1 Introduction

5.1.1 This section of the TA sets out the method for calculating the mode share for the existing school population, and presents the forecast trip generation and distribution associated with the additional school population as part of the development proposals, in both the opening year (2021) and at full capacity (2026).

5.1.2 At the time of the traffic surveys, the school population comprised 846 pupils (698 secondary and 148 sixth form) and 78 staff; this forms the basis of the analysis, given the use of the traffic survey data in the method. Other key data sources (e.g. school bus usage data supplied by the VoG) corresponds with the time of the traffic surveys.

5.2 Existing School

5.2.1 The school does not currently have a TP; this document would typically contain data on the existing mode share of the pupil and staff population, established through travel surveys. A TP forms part of the planning application submission.

5.2.2 In the absence of an existing TP, the TA has utilised a combination of data sources to establish the existing mode share of the pupil and staff population. This includes traffic survey data at the school access, data on school bus use held by the VoG, and data recorded from the 2011 Census. This is considered a reasonable method for establishing an interim mode share, and will be reviewed as part of the development of the TP.

Stage 1: School Access Traffic Generation

5.2.3 The starting point for the assessments involved analysis of the traffic survey data collected at the school access. For the purposes of this exercise, the analysis has focused on the data collected during the morning period, specifically between 07:00 and 09:00. This is considered a reasonable period to provide a snapshot of pupil and staff travel behaviour; the school days commence at 08:30 and therefore it is expected that most/all pupils and staff will be on-site by 09:00, taking account of any late pupil arrivals and differences in staff working hours.

5.2.4 **Table 5.1** summarises the movements to/from the site during this period. These include cars/LGVs and cycles, while movements associated with school buses have been excluded; pupils arriving by this mode are captured in data supplied by the VoG.

Table 5.1: Car/LGV and Cycle Movements (Staff and Pupils) – AM Period (07:00-09:00)

Mode	Arrivals	Departures
Car/LGV	258	181
Cycles	0	0
Total	**258**	**181**

5.2.5 The next stage of the process has been to identify which trips are associated with pupils and staff. The following assumptions have been made:

- Trips associated with staff are ‘arrivals’ only;
- Trips associated with sixth form pupils are ‘arrivals’ only; and
- Trips associated with secondary pupils are escorted and therefore involve an ‘arrival’ and a ‘departure’.

Stage 2: Staff Mode Share

5.2.6 The number of staff arriving by car/LGV has been identified based on a mode share derived through analysis of the 2011 Census 'Journey to Work' data. This has been undertaken for employment trips to the 'Vale of Glamorgan 007' Middle Super Output Area (MSOA); this area contains the existing school and is the most detailed/smallest geographical area available for analysis of method of travel to work. The mode share has been applied to the staff population total of 78; the mode share and resulting number of staff using each mode is set out in **Table 5.2**.

Table 5.2: Staff Mode Share

Mode	Mode Share	No. of Staff
Walk	16%	12
Cycle	1%	1
Public Transport	3%	2
Car	80%	62
Total	**100%**	**78**

5.2.7 **Table 5.2** shows that 80% of staff (62 in total) travel by car. Walking is the next most popular mode for staff, with a mode share of 16% (12 in total).

Stage 3: All Pupils

5.2.8 The next stage has been to identify the movements to/from the site associated with secondary and sixth form pupils. This has been derived by deducting the 'arrivals' associated with staff in **Table 5.2** from the 'arrivals' in **Table 5.1**, as shown in **Table 5.3**.

Table 5.3: Car/LGV and Cycle Movements (Secondary and Sixth Form Pupils) – AM Period (07:00-09:00)

Mode	Arrivals	Departures
Car/LGV	196	181
Cycles	0	0
Total	**196**	**181**

Stage 4: Sixth Form Pupil Mode Share

5.2.9 The vehicular movements associated with sixth form pupils have then been identified by deducting 'departures' from 'arrivals' in **Table 5.3**. The resulting movements to/from the site associated with sixth form pupils are set out in **Table 5.4**.

Table 5.4: Car/LGV and Cycle Movements (Sixth Form Pupils) – AM Period (07:00-09:00)

Mode	Arrivals
Car/LGV	15
Cycles	0
Total	**15**

5.2.10 For robustness, it is assumed that car/LGV movements associated with sixth form pupils have an occupancy level of one pupil per car; this therefore equates to 15 sixth form pupils travelling by car. The VoG has supplied data on school bus use by sixth form pupils; this shows that 15 pupils travel by school bus. In summary, it is identified that, of the 148 sixth form pupils at the existing school, 15 travel by car, 15 by school bus, and none cycle (as none were recorded in the traffic survey). The remaining 119 pupils are assumed to walk. This information and the resulting mode share is shown in **Table 5.5**.

Table 5.5: Mode Share – Sixth Form Pupils

Mode	No. of Pupils	Mode Share
Walk	119	80%
Cycle	0	0%
School Bus	15	10%
Car	15	10%
Total	**148**	**100%**

Note: Summation errors due to rounding.

Stage 5: Secondary Pupil Mode Share

5.2.11 The vehicular movements associated with secondary pupils are considered to be those remaining following deduction of staff 'arrivals' and sixth form pupil 'arrivals' from **Table 5.1**. The resulting movements to/from the site associated with secondary pupils are set out in **Table 5.6**.

Table 5.6: Car/LGV and Cycle Movements (Secondary Pupils) – AM Period (07:00-09:00)

Mode	Arrivals	Departures
Car/LGV	181	181
Cycles	0	0
Total	**181**	**181**

5.2.12 It is assumed that some car/LGV trips transport more than one pupil, for example when siblings or friends travel together in the same vehicle. To account for this, a factor of 1.4 pupils per vehicle, based on analysis of TRICS for this specific land use category, has been applied; this therefore equates to a total of 253 secondary pupils travelling by car. The VoG has supplied data on school bus use by secondary pupils; this shows that 103 pupils travel by school bus. In summary, it is identified that, of the 698 secondary pupils at the existing school, 253 travel by car, 103 by school bus, and none cycle (as none were recorded in the traffic survey). The remaining 341 pupils are assumed to walk. This information and the resulting mode share is shown in **Table 5.7**.

Table 5.7: Mode Share – Secondary Pupils

Mode	No. of Pupils	Mode Share
Walk	341	49%
Cycle	0	0%
School Bus	103	15%
Car	253	36%
Total	**698**	**100%**

Note: Summation errors due to rounding.

Stage 6: Summary Pupil Mode Share of Existing School

5.2.13 The values in **Tables 5.5** and **5.7** have been combined to derive the mode share for all pupils at the existing school, as shown in **Table 5.8**.

Table 5.8: Mode Share – All Pupils

Mode	No. of Pupils	Mode Share
Walk	460	54%
Cycle	0	0%
School Bus	118	14%
Car	268	32%
Total	**846**	**100%**

5.2.14 **Table 5.8** shows that 54% of pupils (460 in total) walk to school. Car is next most popular mode for pupils, with a mode share of 32% (268 in total), followed by school bus, with a mode share of 14% (118 in total).

5.3 Proposed Development at Opening Year (2021)

5.3.1 On the year of opening (expected to be 2021), the proposed development will result in an additional 202 secondary pupils and an additional 52 sixth form pupils. This will result in a total of 1,100 pupils; this is well within what is already consented to be on site (1,331 pupils). There are forecast to be an additional 72 staff, therefore increasing to 150 staff.

5.3.2 It is envisaged that additional secondary/sixth pupils and staff will travel according to the respective mode shares of the existing school.

Sixth Form Pupils

5.3.3 It is envisaged that the additional 52 sixth form pupils will travel according to the mode share of existing sixth form pupils shown in **Table 5.5**. The resulting number of additional pupils in 2021 travelling by each mode is shown in **Table 5.9**.

Table 5.9: Mode Share – Additional Sixth Form Pupils in 2021

Mode	No. of Pupils
Walk	42
Cycle	0
School Bus	5
Car	5
Total	**52**

5.3.4 As per the existing school, it is assumed that sixth form pupils travelling by car will do so at an occupancy level of one pupil per car; this therefore equates to an additional five 'arrivals' during the AM period and five vehicle 'departures' during the PM period; for robustness, these are assumed to occur during the AM and PM peak hours.

Secondary Pupils

5.3.5 It is envisaged that the additional 202 secondary pupils will travel according to the mode share of existing secondary pupils in **Table 5.7**. The resulting number of additional pupils in 2021 travelling by each mode is shown in **Table 5.10**.

Table 5.10: Mode Share – Additional Secondary Pupils in 2021

Mode	No. of Pupils
Walk	99
Cycle	0
School Bus	30
Car	73
Total	**202**

5.3.6 As per the existing school, it is assumed that secondary pupils travelling by car will do so at an occupancy level of 1.4 pupils per car and be escorted; this therefore equates to an additional 52 vehicle 'arrivals' and 52 vehicle 'departures' during the AM and PM periods; for robustness, these are assumed to occur during the AM and PM peak hours.

Summary Pupil Mode Share

5.3.7 The values in **Tables 5.9** and **5.10** have been combined to derive the mode share for the additional pupils at the school in 2021, as shown in **Table 5.11**.

Table 5.11: Mode Share – Additional Pupils in 2021

Mode	No. of Pupils	Mode Share
Walk	141	55%
Cycle	0	0%
School Bus	35	14%
Car	78	31%
Total	**254**	**100%**

5.3.8 The values in **Tables 5.8** and **5.11** have been combined to derive the mode share for the existing and additional pupils at the school in 2021, as shown in **Table 5.12**.

Table 5.12: Mode Share – Existing + Additional Pupils in 2021

Mode	No. of Pupils	Mode Share
Walk	601	55%
Cycle	0	0%
School Bus	153	14%
Car	346	31%
Total	**1,100**	**100%**

Summary Pupil Traffic Generation and Distribution

5.3.9 **Table 5.13** sets out the traffic generation associated with the additional pupils in 2021 during the AM and PM peak hours.

Table 5.13: Traffic Generation – Additional Pupils in 2021

Time Period	Arrivals	Departures	Total
AM Peak Hour (07:45-08:45)	57	52	109
PM Peak Hour (14:45-15:45)	52	57	109

5.3.10 In terms of distribution, it is assumed that the additional traffic will generally follow that of existing movements on the surveyed network. As such, the traffic has been distributed based on observed turning proportions at the surveyed junctions; where appropriate, movements to/from certain junction arms have not been allowed due to only non-residential land uses being served, e.g. movements to/from schools, Barry Hospital and Fire Station at respective site accesses.

Staff

5.3.11 It is envisaged that the additional 72 staff will travel according to the mode share of existing staff in **Table 5.2**. The resulting number of additional staff travelling by each mode in 2021 is shown in **Table 5.14**.

Table 5.14: Mode Share – Additional Staff in 2021

Mode	Mode Share	No. of Staff
Walk	16%	11
Cycle	1%	1
Public Transport	3%	2
Car	80%	58
Total	**100%**	**72**

5.3.12 The values in **Tables 5.2** and **5.14** have been combined to derive the mode share for the existing and additional staff at the school in 2021, as shown in **Table 5.15**.

Table 5.15: Mode Share – Existing + Additional Staff in 2021

Mode	Mode Share	No. of Staff
Walk	16%	24
Cycle	1%	2
Public Transport	3%	4
Car	80%	120
Total	**100%**	**150**

5.3.13 **Table 5.16** sets out the traffic generation associated with the additional staff in 2021 during the AM and PM peak hours. For robustness, staff arrivals and departures are assumed to occur during the AM and PM peak hours. It should also be highlighted that traffic flows on the study area network are higher during this period than the 'traditional' PM peak hour (typically 16:30 onwards), and therefore, adding staff trips during to the hour with the higher level of traffic flows provides for a robust assessment.

Table 5.16: Traffic Generation – Additional Staff in 2021

Time Period	Arrivals	Departures	Total
AM Peak Hour (07:45-08:45)	58	0	58
PM Peak Hour (14:45-15:45)	0	58	58

5.3.14 In terms of distribution, it is assumed that the additional traffic will generally follow that of existing staff, identified from analysis of the 2011 Census 'Journey to Work' data for employment trips to the 'Vale of Glamorgan 007' MSOA.

Summary Traffic Generation and Distribution – Additional School Population in 2021

5.3.15 The values in **Tables 5.13** and **5.16** have been combined to derive the traffic generation for the additional school population in 2021, as shown in **Table 5.17**.

Table 5.17: Traffic Generation – Additional School Population in 2021

Time Period	Arrivals	Departures	Total
AM Peak Hour (07:45-08:45)	115	52	168
PM Peak Hour (14:45-15:45)	52	115	168

Note: Summation errors during rounding.

5.3.16 The traffic on the study area network associated with the additional school population in 2021 during the AM and PM peak hours is shown on **Figures 5.1** and **5.2** respectively.

5.4 Proposed Development at Full Capacity (2026)

5.4.1 The proposed development is expected to reach full pupil capacity by 2026. Compared with the existing school population, this will result in an additional 352 secondary pupils and an additional 52 sixth form pupils. This will result in a total of 1,250 pupils; this is well within what is consented to be on site (1,331 pupils). There are forecast to be an additional 72 staff, therefore increasing to 150 staff.

5.4.2 It is envisaged that additional secondary/sixth pupils and staff will travel according to the respective mode shares of the existing school. This is considered to represent a 'worst-case' in terms of sustainable travel mode shares in that it does not take account of the implementation of TP measures, which will have begun five years prior, on opening of the proposed development in 2021.

Sixth Form Pupils

5.4.3 It is envisaged that the additional 52 sixth form pupils will travel according to the mode share of existing sixth form pupils shown in **Table 5.5**. The resulting number of additional pupils in 2026 travelling by each mode is shown in **Table 5.18**.

Table 5.18: Mode Share – Additional Sixth Form Pupils in 2026

Mode	No. of Pupils
Walk	42
Cycle	0
School Bus	5
Car	5
Total	**52**

5.4.4 As per the existing school, it is assumed that sixth form pupils travelling by car will do so at an occupancy level of one pupil per car; this therefore equates to an additional five 'arrivals' during the AM period and five vehicle 'departures' during the PM period; for robustness, these are assumed to occur during the AM and PM peak hours.

Secondary Pupils

5.4.5 It is envisaged that the additional 352 secondary pupils will travel according to the mode share of existing secondary pupils in **Table 5.7**. The resulting number of additional pupils in 2026 travelling by each mode is shown in **Table 5.19**.

Table 5.19: Mode Share – Additional Secondary Pupils in 2026

Mode	No. of Pupils
Walk	172
Cycle	0
School Bus	52
Car	128
Total	**352**

5.4.6 As per the existing school, it is assumed that secondary pupils travelling by car will do so at an occupancy level of 1.4 pupils per car and be escorted; this therefore equates to an additional 128 vehicle 'arrivals' and 128 vehicle 'departures' during the AM and PM periods; for robustness, these are assumed to occur during the AM and PM peak hours.

Summary Pupil Mode Share

5.4.7 The values in **Tables 5.18** and **5.19** have been combined to derive the mode share for the additional pupils at the school in 2026, as shown in **Table 5.20**.

Table 5.20: Mode Share – Additional Pupils in 2026

Mode	No. of Pupils	Mode Share
Walk	214	53%
Cycle	0	0%
School Bus	57	14%
Car	133	33%
Total	**404**	**100%**

5.4.8 The values in **Tables 5.8** and **5.11** have been combined to derive the mode share for the existing and additional pupils at the school in 2026, as shown in **Table 5.21**.

Table 5.21: Mode Share – Existing + Additional Pupils in 2026

Mode	No. of Pupils	Mode Share
Walk	674	54%
Cycle	0	0%
School Bus	175	14%
Car	401	32%
Total	**1,250**	**100%**

Summary Pupil Traffic Generation and Distribution

5.4.9 **Table 5.22** sets out the traffic generation associated with the additional pupils in 2026 during the AM and PM peak hours.

Table 5.22: Traffic Generation – Additional Pupils in 2026

Time Period	Arrivals	Departures	Total
AM Peak Hour (07:45-08:45)	96	91	188
PM Peak Hour (14:45-15:45)	91	96	188

5.4.10 In terms of distribution, it is assumed that the additional traffic will generally follow that of existing movements on the surveyed network. As such, the traffic has been distributed based on observed turning proportions at the surveyed junctions; where appropriate, movements to/from certain junction arms have not been allowed due to only non-residential land uses being served, e.g. movements to/from schools, Barry Hospital and Fire Station at respective site accesses.

Staff

5.4.11 It is envisaged that the additional 72 staff will travel according to the mode share of existing staff in **Table 5.2**. The resulting number of additional staff travelling by each mode in 2026 is shown in **Table 5.23**.

Table 5.23: Mode Share – Additional Staff in 2026

Mode	Mode Share	No. of Staff
Walk	16%	11
Cycle	1%	1
Public Transport	3%	2
Car	80%	58
Total	**100%**	**72**

5.4.12 The values in **Tables 5.2** and **5.23** have been combined to derive the mode share for the existing and additional staff at the school in 2026, as shown in **Table 5.24**.

Table 5.24: Mode Share – Existing + Additional Staff in 2026

Mode	Mode Share	No. of Staff
Walk	16%	24
Cycle	1%	2
Public Transport	3%	4
Car	80%	120
Total	**100%**	**150**

5.4.13 **Table 5.25** sets out the traffic generation associated with the additional staff in 2026 during the AM and PM peak hours. For robustness, staff arrivals and departures are assumed to occur during the AM and PM peak hours. In reality, staff will typically remain on site following the afternoon pick-up period and depart at a later time, normally spread across a two-hourly period (as identified from traffic survey data for the existing school access). It should also be highlighted that traffic flows on the study area network are higher during this period than the 'traditional' PM peak hour (typically 16:30 onwards), and therefore, adding staff trips during to the hour with the higher level of traffic flows provides for a robust assessment.

Table 5.25: Traffic Generation – Additional Staff in 2026

Time Period	Arrivals	Departures	Total
AM Peak Hour (07:45-08:45)	58	0	58
PM Peak Hour (14:45-15:45)	0	58	58

5.4.14 In terms of distribution, it is assumed that the additional traffic will generally follow that of existing staff, identified from analysis of the 2011 Census 'Journey to Work' data for employment trips to the 'Vale of Glamorgan 007' MSOA.

Summary Traffic Generation and Distribution – Additional School Population in 2026

5.4.15 The values in **Tables 5.22** and **5.25** have been combined to derive the traffic generation for the additional school population in 2026, as shown in **Table 5.26**.

Table 5.26: Traffic Generation – Additional School Population in 2026

Time Period	Arrivals	Departures	Total
AM Peak Hour (07:45-08:45)	154	91	245
PM Peak Hour (14:45-15:45)	91	154	245

Note: Summation errors during rounding.

5.4.16 The traffic on the study area network associated with the additional school population in 2026 during the AM and PM peak hours is shown on **Figures 5.3** and **5.4** respectively.

5.5 Summary

5.5.1 The TA has utilised a combination of data sources to establish the existing mode share of the pupil and staff population. This includes traffic survey data at the school access, data on school bus use held by the VoG, and data recorded from the 2011 Census. This is considered a reasonable method for establishing an interim mode share, and will be reviewed as part of the development of the TP.

5.5.2 For the existing school, it is identified that 80% of staff travel by car. Walking is the next most popular mode for staff, with a mode share of 16%. For pupils, 32% travel by car, 14% by school bus and 54% walk. No pupils were identified as cycling; however, these may have not been captured in the survey of traffic movements at the school access, for example, due to pupils dismounting prior to the school access.

5.5.3 The proposed additional pupils are envisaged to travel according to the identified mode shares of the existing pupil population. In 2021 (the opening year), the resulting mode share of the existing and additional pupils combined shows that 31% will travel by car, 14% by school bus and 55% walk. In 2026 (full capacity), the resulting mode share of the existing and additional pupils combined shows that 32% will travel by car, 14% by school bus and 54% walk. These should form an initial baseline for setting of TP targets, prior to school travel surveys being undertaken.

5.5.4 The proposed additional staff at the school are envisaged to travel according to the identified mode shares of the existing staff population. The resulting mode share of the existing and additional staff combined in both 2021 (opening year) and 2026 (full capacity) shows that 80% will travel by car, 16% walk, 3% by public transport and 1% cycle.

5.5.5 The additional school population will generate an additional 168 vehicle movements during the AM and PM peak hours in 2021 (opening year), and an additional 245 vehicle movements during the AM and PM peak hours in 2026 (full capacity). Traffic associated with additional pupils has been distributed onto the surveyed network based on observed turning proportions, taking account of appropriate origins/destinations. Traffic associated with additional staff has been distributed based on analysis of 2011 Census ‘Journey to Work’ data.

5.5.6 The forecasts for 2026 (full capacity) are considered to represent a ‘worst-case’ in terms of sustainable travel mode shares and traffic generation in that it does not take account of the implementation of TP measures, which will have begun five years prior, on opening of the proposed development in 2021.

5.5.7 It should be noted that, whilst the proposed development will result in an increase in the existing school population (from 846 pupils at the time of the traffic surveys to 1,250 pupils at full capacity), this is still well within what is consented to be on the site. The increases in trip generation are therefore already considered to be consented, but have been provided for information purposes.

6. Assessment Scenarios

6.1 Introduction

6.1.1 This section sets out the scenarios that have been developed for assessment of the impact of the proposed development on the study area network. A number of assessment scenarios have been developed, based on the school population on opening (2021) and at full capacity (2026). These are summarised in **Table 6.1**. The assessment scenarios cover the weekday AM peak hour (07:45-08:45) and weekday PM peak hour (14:45-15:45).

Table 6.1: Assessment Scenarios

No.	Name	Description
1	2018 Base Year	Existing traffic flows on the study area network.
2	2021 Base	Includes traffic growth and committed development. 2021 is the opening year of the proposed development.
3	2021 Base + Development	Scenario 2 + proposed development in 2021.
4	2026 Base	Includes traffic growth and committed development. 2026 is the year when the proposed development is expected to reach full capacity.
5	2026 Base + Development	Scenario 4 + proposed development in 2026.

6.1.2 A spreadsheet model has been prepared to derive the traffic flows for each assessment scenario, which have then been used for impact assessment purposes. The spreadsheet model incorporates the method for establishing the trip generation of the proposed development.

6.1.3 It should be noted that, whilst the proposed development will result in an increase in the existing school population, this is still well within what is consented to be on the site. The increases in trip generation are therefore already considered to be consented and deemed acceptable; this impact assessment is therefore intended for information purposes only.

6.2 Growth Forecasts

6.2.1 In order to estimate future growth in traffic flows, traffic growth factors have been obtained from TEMPro (NTEM Dataset 7.0). The TEMPro program is based on the National Trip End Model (NTEM) and takes into account changes in car ownership and local planning forecasts regarding housing and employment.

6.2.2 The forecast has been based on an ‘Urban, Principal’ road. The surveyed network comprises numerous MSOAs; these are ‘The Vale of Glamorgan 007’, ‘The Vale of Glamorgan 010’ and ‘The Vale of Glamorgan 013’. An average has been calculated from the derived factors and has been used for assessment, which is considered reasonable. The derived factors and the calculated average are set out in **Table 6.2**.

Table 6.1: TEMPro Growth Factors

Time Period	MSOA	Growth Period	
		2018-2021	2018-2026
AM Peak Period (07:00-10:00)	The Vale of Glamorgan 007	1.041	1.092
	The Vale of Glamorgan 010	1.027	1.066
	The Vale of Glamorgan 013	1.040	1.090
	Average	**1.036**	**1.083**
Interpeak Period (10:00-16:00)	The Vale of Glamorgan 007	1.048	1.107
	The Vale of Glamorgan 010	1.036	1.084
	The Vale of Glamorgan 013	1.048	1.108
	Average	**1.044**	**1.100**

6.3 Committed Development

6.3.1 The future year forecasts include traffic flows associated with the proposals for WHS and YGBM, which have recently submitted planning applications or received planning consent. Traffic flows from the respective TAs have been obtained and are shown for the AM and PM peak hours in **Figures 6.1** and **6.2** respectively.

6.4 Scenario Composition

Scenario 1 – 2018 Base Year

6.4.1 As discussed in **Section 2**, traffic data has been collected at the key junctions in the study area network. The observed traffic flows for the AM and PM peak hours are shown in **Figures 2.1** and **2.2** respectively.

Scenario 2 – 2021 Base

6.4.2 The assessment year of 2021 represents the opening year of the proposed development. The 2018-2021 growth factors in **Table 6.2** have been applied to the 2018 Base Year traffic flows in **Figures 2.1** and **2.2**; these have been applied to all movements with the exceptions of movements to/from schools, Barry Hospital and Fire Station at respective site accesses.

6.4.3 The growthed traffic flows have then been added to the traffic associated with committed development (see **Figures 6.1 and 6.2**). The resulting '2021 Base' traffic flows for the AM and PM peak hours are shown in **Figures 6.3** and **6.4** respectively.

Scenario 3 – 2021 Base + Development

6.4.4 The traffic flows for '2021 Base + Development' follow the same methodology as for '2021 Base', but take account of the additional traffic associated with the growth in school population on opening in 2021.

6.4.5 The additional traffic associated with the proposed school in 2021 (see **Figures 5.1** and **5.2**) has been added to the '2021 Base' traffic flows (see **Figures 6.3** and **6.4**). The resulting '2021 Base + Development' traffic flows for the AM and PM peak hours are shown in **Figures 6.5** and **6.6** respectively.

Scenario 4 – 2026 Base

6.4.6 The assessment year of 2026 represents when the proposed development is expected to be at full capacity. The 2018-2026 growth factors in **Table 6.2** have been applied to the 2018 Base Year traffic flows in **Figures 2.1** and **2.2**; these have been applied to all movements with the exceptions of movements to/from schools, Barry Hospital and Fire Station at respective site accesses.

6.4.7 The growthed traffic flows have then been added to the traffic associated with committed development (see **Figures 6.1** and **6.2**). The resulting '2021 Base' traffic flows for the AM and PM peak hours are shown in **Figures 6.7** and **6.8** respectively.

Scenario 5 – 2028 With Development

6.4.8 The traffic flows for '2026 Base + Development' follow the same methodology as for '2026 Base', but take account of the additional traffic associated with the growth in school population at full capacity in 2026.

6.4.9 The additional traffic associated with the proposed school in 2026 (see **Figures 5.3** and **5.4**) has been added to the '2026 Base' traffic flows (see **Figures 6.7** and **6.8**). The resulting '2026 Base + Development' traffic flows for the AM and PM peak hours are shown in **Figures 6.9** and **6.10** respectively.

7. Traffic Impact Assessment

7.1 Introduction

7.1.1 The assessment has examined the impact of the proposed development in terms of the changes in traffic flows at the surveyed junctions in the network in 2021 and 2026.

7.2 2021 Assessment Scenarios

7.2.1 **Tables 7.1** and **7.2** set out the total traffic entering each junction in the 2021 scenarios, the difference and percentage change during the AM and PM peak hours respectively.

Table 7.1: 2021 Junction Inflow Comparison – AM Peak Hour

Junction	Base	Base + Development	Difference	Percentage Change
MDR/PHS access priority junction	740	907	+168	+23%
A4050/MDR roundabout junction	1,998	2,083	+85	+4%
A4050/A4226 roundabout junction	2,432	2,477	+45	+2%
A4050/Barry Hospital and YGBM access signal-controlled junction	1,875	1,893	+17	+1%
Barry Hospital/YGBM priority junction	756	756	+0	+0%
A4050/Barry Road mini-roundabout junction	2,423	2,441	+17	+1%
A4226/entrance to WHS/Barry Fire Station crossroads junction	1,503	1,529	+27	+2%
A4226/exit from WHS/Stirling Road signal-controlled junction	1,532	1,559	+27	+2%

Table 7.2: 2021 Junction Inflow Comparison – PM Peak Hour

Junction	Base	Base + Development	Difference	Percentage Change
MDR/PHS access priority junction	485	652	+168	+35%
A4050/MDR roundabout junction	2,176	2,290	+113	+5%
A4050/A4226 roundabout junction	2,634	2,697	+62	+2%
A4050/Barry Hospital and YGBM access signal-controlled junction	2,089	2,114	+25	+1%
Barry Hospital/YGBM priority junction	659	659	+0	+0%
A4050/Barry Road mini-roundabout junction	2,789	2,814	+25	+1%
A4226/entrance to WHS/Barry Fire Station crossroads junction	1,420	1,456	+36	+3%
A4226/exit from WHS/Stirling Road signal-controlled junction	1,678	1,714	+36	+2%

Note: Summation errors due to rounding.

7.2.2 **Tables 7.1** and **7.2** shows that the proposed development will result in increases in traffic flows entering the junctions in the network of no more than 5%, with the exception of the MDR/PHS access priority junction. This will experience increases in traffic of 23% and 35% during the AM and PM peak hours respectively.

7.2.3 Whilst these increases are not insignificant, they should be viewed in the context of the proposed number of pupils in 2021 (1,100 pupils) being well within what is consented (1,331 pupils) on the site.

7.3 2026 Assessment Scenarios

7.3.1 **Tables 7.3** and **7.4** set out the total traffic entering each junction in the 2026 scenarios, the difference and percentage change during the AM and PM peak hours respectively.

Table 7.3: 2026 Junction Inflow Comparison – AM Peak Hour

Junction	Base	Base + Development	Difference	Percentage Change
MDR/PHS access priority junction	755	1,000	+245	+32%
A4050/MDR roundabout junction	2,086	2,199	+114	+5%
A4050/A4226 roundabout junction	2,536	2,600	+64	+3%
A4050/Barry Hospital and YGBM access signal-controlled junction	1,925	1,949	+24	+1%
Barry Hospital/YGBM priority junction	756	756	+0	+0%
A4050/Barry Road mini-roundabout junction	2,526	2,550	+24	+1%
A4226/entrance to WHS/Barry Fire Station crossroads junction	1,559	1,599	+39	+3%
A4226/exit from WHS/Stirling Road signal-controlled junction	1,595	1,634	+39	+2%

Note: Summation errors due to rounding.

Table 7.4: 2026 Junction Inflow Comparison – PM Peak Hour

Junction	Base	Base + Development	Difference	Percentage Change
MDR/PHS access priority junction	505	751	+245	+49%
A4050/MDR roundabout junction	2,289	2,452	+163	+7%
A4050/A4226 roundabout junction	2,769	2,862	+94	+3%
A4050/Barry Hospital and YGBM access signal-controlled junction	2,165	2,202	+38	+2%
Barry Hospital/YGBM priority junction	659	659	+0	+0%
A4050/Barry Road mini-roundabout junction	2,932	2,970	+38	+1%
A4226/entrance to WHS/Barry Fire Station crossroads junction	1,489	1,544	+55	+4%
A4226/exit from WHS/Stirling Road signal-controlled junction	1,759	1,814	+55	+3%

Note: Summation errors due to rounding.

7.3.2 **Tables 7.3** and **7.4** shows that the proposed development will result in increases in traffic flows entering the junctions in the network of no more than 7%, with the exception of the MDR/PHS access priority junction. This will experience increases in traffic of 32% and 49% during the AM and PM peak hours respectively.

7.3.3 Whilst these increases are not insignificant, they should be viewed in the context of the proposed number of pupils in 2026 (1,250 pupils) being well within what is consented (1,331 pupils) on the site. These forecasts are also considered to represent a 'worst-case' in that they do not take account of the implementation of TP measures, which will have begun five years prior, on opening of the proposed development in 2021.

7.4 Summary

7.4.1 The traffic impact assessment has considered five assessment scenarios; 2018 Base Year, 2021 Base, 2021 Base + Development, 2026 Base and 2026 + Development; 2021 is expected to be the opening year of the proposed development and 2026 is expected be when full capacity is achieved. The future year forecasts include traffic growth and committed development.

7.4.2 An assessment has been undertaken of the impact of the proposed development in terms of the changes in traffic flows at the surveyed junctions in the network. This has identified that, in 2021, the proposed development will result in increases in traffic of no more than 5%, with the exception of the MDR/PHS access priority junction. This will experience increases in traffic of 23% and 35% during the AM and PM peak hours respectively.

7.4.3 In 2026, the proposed development will result in increases in traffic flows entering the junctions in the network of no more than 7%, with the exception of the MDR/PHS access priority junction. This will experience increases in traffic of 32% and 49% during the AM and PM peak hours respectively. These forecasts are considered to represent a 'worst-case' in that they do not take account of the implementation of TP measures, which will have begun five years prior, on opening of the proposed development in 2021.

7.4.4 Whilst these increases are not insignificant, they should be viewed in the context of the proposed number of pupils (1,100 pupils in 2021; 1,250 pupils in 2026) is well within what is consented to be on the site (1,331 pupils).

7.4.5 It should be noted that this has TA been carried out in combination with assessment work for other school proposals in the immediate local area (WHS and YGBM). Consideration has therefore been given to the overall changes in pupil numbers as a result of these proposals coming forward that have been submitted for planning or received planning consent. **Table 7.5** provides a comparison of the existing permitted capacity at the schools concerned, and the proposed pupil numbers.

Table 7.5: Comparison of Consented and Proposed Pupil Numbers

School	Consented	Proposed	Difference
PHS	1,331	1,250	-81
WHS	1,423	1,100	-323
YGBM	1,361	1,660	+299
Total	**4,115**	**4,010**	**-105**

7.4.6 **Table 7.5** shows that both PHS and WHS will experience a net reduction in pupil population from what is currently consented on site, while YGBM will experience a net increase. Overall, there will be a net reduction in pupil population when compared with the total consent across all the sites.

8. Transport Implementation Strategy

8.1 Introduction

8.1.1 TAN 18 requires any TA document to provide the information necessary to assess the suitability of an application in travel demand and traffic impact terms. It recommends that a Transport Implementation Strategy (TIS) should be included within the TA. The TIS is intended to set objectives and targets in managing travel demand, whilst detailing the infrastructure and measures necessary to achieve them. The TIS should also set up a framework for monitoring the targets including modal travel choice.

8.1.2 A TIS shares many of the same goals as a TP; therefore, the modal information, targets and measures set out in this section informs the TP, which is included as part of the planning application submission. The implementation of the TP and associated monitoring and reporting of performance will be undertaken by a Travel Plan Co-ordinator (TPC).

8.2 Mode Share and Targets

8.2.1 Mode share targets are used to evaluate the success of the TIS and to identify areas on which further measures should be focused in order to help to drive travel behaviour change. To enable the setting of valid and realistic targets, a valid baseline first needs to be established.

8.2.2 **Section 5** of the TA sets out the forecast mode share of the school with the development proposals. The staff and pupil mode share which has been calculated as part of the assessments is summarised in **Table 8.1** for 2021 (opening year) and 2026 (full capacity).

Table 8.1: Forecast Mode Share

Mode	Mode Share (2021)		Mode Share (2026)	
	Staff	Pupils	Staff	Pupils
Walk	16%	55%	16%	54%
Cycle	1%	0%	1%	0%
Public Transport/School Bus	3%	14%	3%	14%
Car	80%	31%	80%	32%
Total	**100%**	**100%**	**100%**	**100%**

8.2.3 **Table 8.1** provides mode share forecasts for both 2021 (opening year) and 2026 (full capacity). Given that the TP will be implemented from the opening year, it is appropriate to set targets based on the forecast mode share for that time. The target will be to reduce the 'car' mode share by 6% (from 31% to 25% for pupils, from 80% to 74% for staff) over five years, consistent with Smarter Choices' report *Changing the way we travel* (2004). Following the baseline travel survey this target can be confirmed or adjusted as appropriate, following discussion between the VoG and the TPC.

8.3 Monitoring and Evaluation

8.3.1 The point at which baseline travel surveys are required will be subject to agreement with the VoG. A minimum response rate to the travel surveys will be required to be set and agreed to ensure that the data is representative.

8.3.2 The format of the baseline and monitoring surveys will need to be agreed with the VoG. In general, these will seek to establish the actual travel patterns, the reasons for travel choice and potential measures to encourage consideration of alternatives. For staff, it is envisaged that the surveys will be primarily online-based, but paper copies will also be made available to staff should they prefer. For pupils and staff at the schools, a combination of survey methods could be utilised, and is likely to include the following:

- Hands-up surveys of pupils;
- Manual counts at school drop-off/pick-up periods; and
- Pupil/parent and staff questionnaires.

8.3.3 The results of the baseline travel surveys will be analysed and the factors influencing travel behaviour will be investigated. It will then be necessary for the TPC to review and update the respective TP to include additional details and the need for any other measures not already included that require further investigation. Specific objectives and targets will need to be identified, separated into short/medium/long term targets, and will need to be SMART (Specific, Measurable, Achievable, Realistic, and Timed). Specific actions and measures to encourage sustainable modes of travel will be identified. For the on-going management of the TP to be successful and to deliver the desired outcomes, it is important that the parties involved in the delivery of the TP, which means the TPC, and the VoG, work effectively in partnership to achieve the desired results.

8.3.4 Monitoring of the TP will be required for a five year period from the date of the baseline travel surveys. They will be undertaken at one, three and five years after the date (or close to the date) of the baseline travel surveys. The TPC will aim to coordinate the baseline travel surveys and subsequent monitoring surveys to ensure consistency between the collection of data for the TP. Surveys will avoid sustained periods of inclement weather or when there is significant disruption to the local road or public transport network.

8.3.5 A monitoring report will be prepared by the TPC for each monitoring survey. These will identify the results of the surveys and success of the measures implemented in achieving the targets. The reports will be submitted to the VoG for comment. If the targets are not met then it will be necessary to review what remedial measures need to be implemented to mitigate the impact of any under achievement.

8.4 Measures and Interventions

8.4.1 In order to achieve the reduction in single occupancy car use and encourage a modal shift to more sustainable forms of travel, a number of measures will be implemented. These will include a combination of physical infrastructure in the design of the development and also TP measures.

Physical Infrastructure

8.4.2 It is proposed that people of all abilities shall be able to easily enter into and move through the landscape and each space within it via level or ramped entry points where necessary. Existing footpaths may be re-aligned to suit new desire lines and entry points.

8.4.3 The masterplan includes a safe and convenient network of footways into the school. Pedestrian access will be via the existing vehicle access off MDR to the west. A pedestrian only link will also be provided to Blyth Close, located to the south, which provides a more direct route to Skomer Road. The existing footway will be improved to accommodate a shared footway/cycleway which will run from the existing entrance through to the school building. Internal access roads which require crossing will include dropped kerbs and tactile paving, such as the service road access,a footway crossover will be provided at the access to the caretaker's property. The bus bay areas will include easy and direct transfer facilities to the school together with pupil holding areas.

8.4.4 There are footpaths within the site, generally surrounding the building. The school buses will drop-off pupils at the front of the school, providing direct access to the school entrance.

8.4.5 Traffic calming measures will be implemented along access road, with the inclusion of a pedestrian crossing to facilitate pedestrian movements where the northern footway terminates.

8.4.6 A total of 76 cycle parking spaces are proposed, in accordance with parking standards, to be located near the main entrance.

TP Measures

8.4.7 A TP has been prepared and a TPC will be appointed who will be responsible in ensuring the success of the TP and its targets and objectives. The TP contains a range of measures additional to those that will be provided as part of the development to enhance the attractiveness of sustainable travel and to encourage the use of the walking, cycling and public transport infrastructure. Additional measures include:

- Newsletters;
- Noticeboards advertising sustainable transport information; and

- Promotion of national sustainable transport initiatives such as national walk to school day and bike to school week, etc.

8.5 Summary

8.5.1 Targets have been set for the reduction of private car use and a commitment to a TP and monitoring programme has been made.

8.5.2 The TIS has set out the measures that will be implemented as part of the development proposals to help to achieve the targets and objectives set. The TP measures will add another layer of interventions which will continue to promote and encourage the range of facilities available and improve awareness or provision wherever possible.

9. Conclusions

9.1 This TA has been prepared by AECOM on behalf of the VoG to provide transport planning and highways advice to inform a planning application for a new school development at PHS. It has been prepared with regard to pre-application discussions with the VoG, in its role as LHA and LEA.

9.1.1 The existing school, rebranded as PHS, currently has 846 pupils enrolled (at the time of the traffic surveys) with a permitted total capacity of 1,331 pupils. The existing staff numbers are a total of 78, with 53 being teaching staff and 25 being non-teaching staff.

9.1.2 The new school is expected to open in 2021, with up to 1,100 pupils enrolled, of which up to 200 will be sixth form students. Pupil numbers are expected to steadily increase until full capacity is reached in 2026, at which point the school will enrol up to 1,250 pupils, of which up to 200 will be sixth form students. The number of staff is expected to increase in accordance with pupils to 150, with 105 being teaching staff and 45 being non-teaching staff. In terms of transport, the proposals include:

- Improved footway to accommodate shared pedestrian and cyclist use;
- Traffic calming measures will be implemented along access road, with the inclusion of a pedestrian crossing to facilitate pedestrian movements where the northern footway terminates.
- Reconfiguration of internal access junction to remove circulatory parking on roundabout island;
- Formal bus/coach drop-off and pick-up bays for two coaches and one minibus, with pupil holding areas; and
- Minibus parking for school travel transport and also for school time events.

9.1.3 The proposed development will not result in an increase in the number of pupils beyond the permitted capacity (1,331 pupils). There will be an increase in staffing level to support the increase in pupil population from what is currently on roll.

9.1.4 A detailed review of the existing highway network and baseline situation has been carried out. The site benefits from existing provision for pedestrians and cyclists in the locality, including footways on both sides of the majority of roads surrounding the site. Residential areas and a range of local facilities are located within walking and cycling distance of the site. Frequent weekday bus services to numerous residential areas and key destinations within Barry are accessible from bus stops within the IHT's suggested 'acceptable' walking distance. Rail services are available from numerous railway stations in Barry, the nearest being Cadoxton. This provides accesses to high/reasonable frequency services to/from Cardiff Central and Bridgend.

9.1.5 PIC data has been obtained from the WG for the period from 1st January 2013 to 30th June 2018 (a 5½ year period, the most recent for which data was available). A total of 20 PICs were recorded in study area over the study period, of which 16 were categorised as 'slight'. The remaining four PICs were recorded as 'serious'. No 'fatal' PICs were recorded in the study area. On the basis of the analysis it is affirmed that it can be concluded that there is no existing highway safety issue in the study area that would be exacerbated by the proposed development. The type, causation, dates and location of PICs does not suggest a particular pattern or correlation that would draw attention to any existing safety issues within the local study area.

9.1.6 The school is accessed off MDR, with an access road of approximately 120m in length, between this and the school access roundabout. It is recommended that traffic calming measures, such as speed cushions and speed limit signs, are introduced along this access road to help reduce vehicle speeds further.

9.1.7 Car, cycle and motorcycle parking will be provided in accordance with adopted standards. In summary this includes 139 car parking spaces (of which eight are designated as disabled bays), 76 cycle parking spaces and nine motorcycle parking spaces. Parking for two coaches and a minibus is provided off the main roundabout within the site. Parking for two additional minibuses is provided in the eastern parking area.

9.1.8 The development proposals align with existing and emerging planning and transport policy at both a national and local level. The proposals will facilitate sustainable travel through a number of measures including the implementation of a TP, which forms part of the planning application submission.

9.1.9 The TA has utilised a combination of data sources to establish the existing mode share of the pupil and staff population and the forecast mode share of the proposed development. This will be used to inform initial mode share targets in the TP.

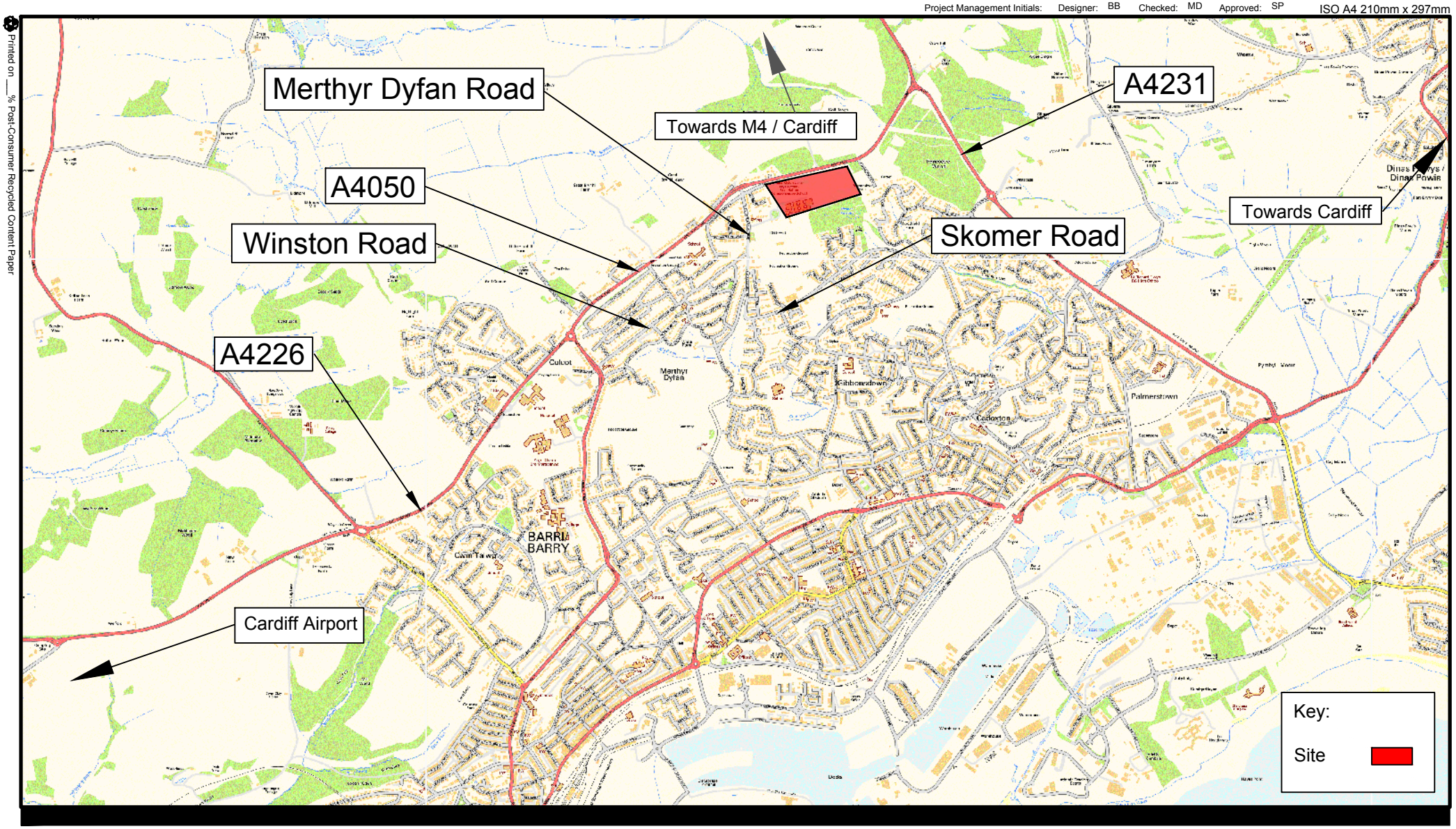
9.1.10 The additional school population will generate an additional 168 vehicle movements during the AM and PM peak hours in 2021 (opening year), and an additional 245 vehicle movements during the AM and PM peak hours in 2026 (full capacity). Traffic associated with additional pupils has been distributed onto the surveyed network based on observed turning proportions, taking account of appropriate origins/destinations. Traffic associated with additional staff has been distributed based on analysis of 2011 Census 'Journey to Work' data.

9.1.11 An assessment has been undertaken of the impact of the proposed development in terms of the changes in traffic flows at the surveyed junctions in the network. This has identified that, in 2021, the proposed development will result in increases in traffic of no more than 5%, with the exception of the MDR/PHS access priority junction. This will experience increases in traffic of 23% and 35% during the AM and PM peak hours respectively. In 2026, the proposed development will result in increases in traffic flows entering the junctions in the network of no more than 7%, with the exception of the MDR/PHS access priority junction. This will experience increases in traffic of 32% and 49% during the AM and PM peak hours respectively. Whilst these increases are not insignificant, they should be viewed in the context of the proposed number of pupils (1,100 pupils in 2021; 1,250 pupils in 2026) is well within what is consented to be on the site (1,331 pupils). These forecasts are also considered to represent a 'worst-case' in that they do not take account of the implementation of TP measures, which will have begun five years prior, on opening of the proposed development in 2021.

9.1.12 This TA has been carried out in combination with other school proposals in the immediate local area (WHS and YGBM). Consideration has therefore been given to the overall changes in pupil numbers as a result of these proposals coming forward that have been submitted for planning or received planning consent. Overall, there will be a net reduction in pupil population when compared with what the total consent across all the sites. Therefore, there is a corresponding reduction in traffic across the local network linked to wider school proposals for less pupils than that which is consented.

9.1.13 Further to the findings of this TA, it can be concluded that there are no transport reasons why the proposed development should not be granted planning permission.

Figures



Pencoedtre High School, Barry

Transport Assessment

Figure 1.1: Site Location Plan

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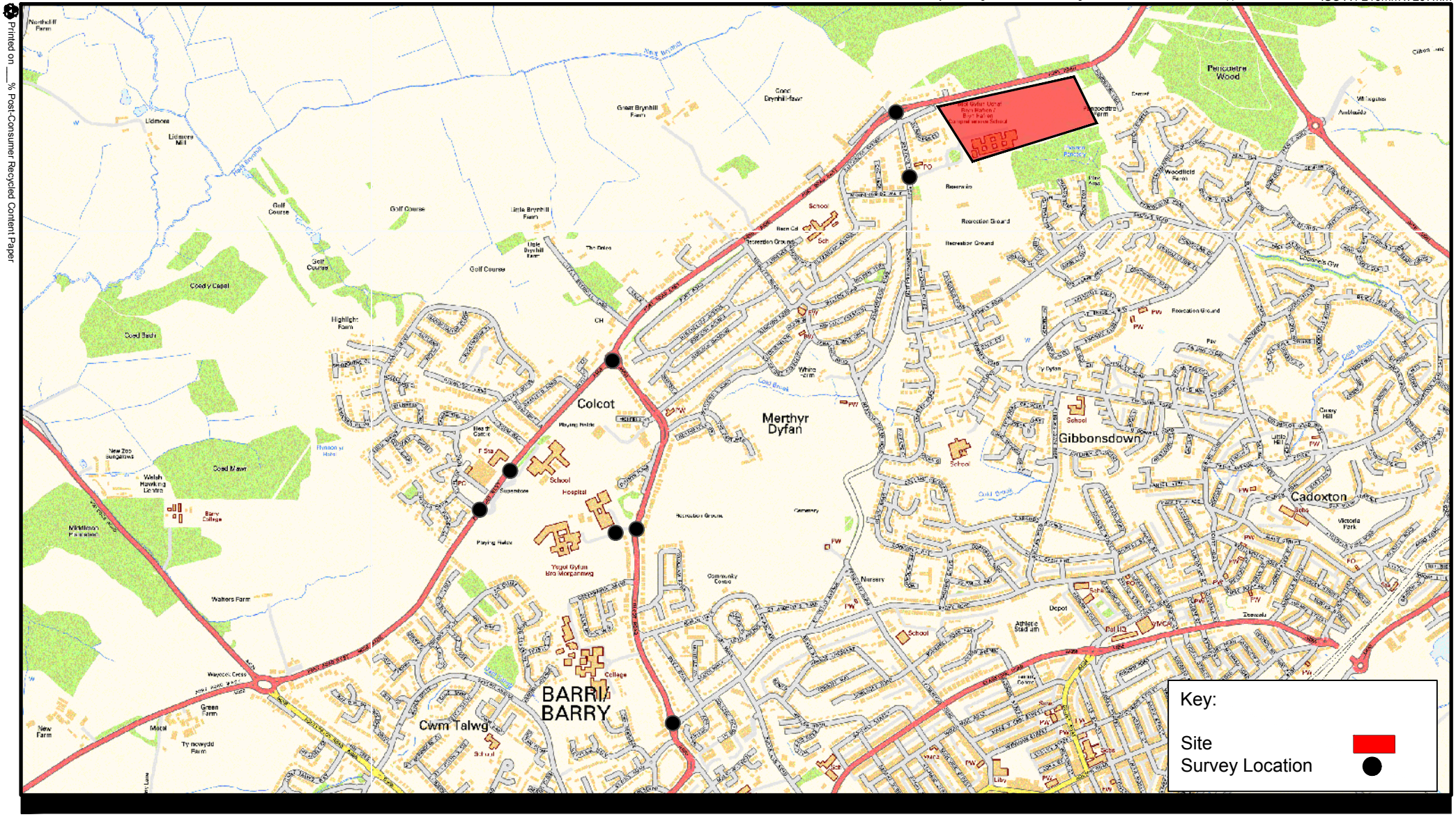

Pencoedtre High School, Barry

Transport Assessment

Figure 2.1: Traffic Surveys Plan

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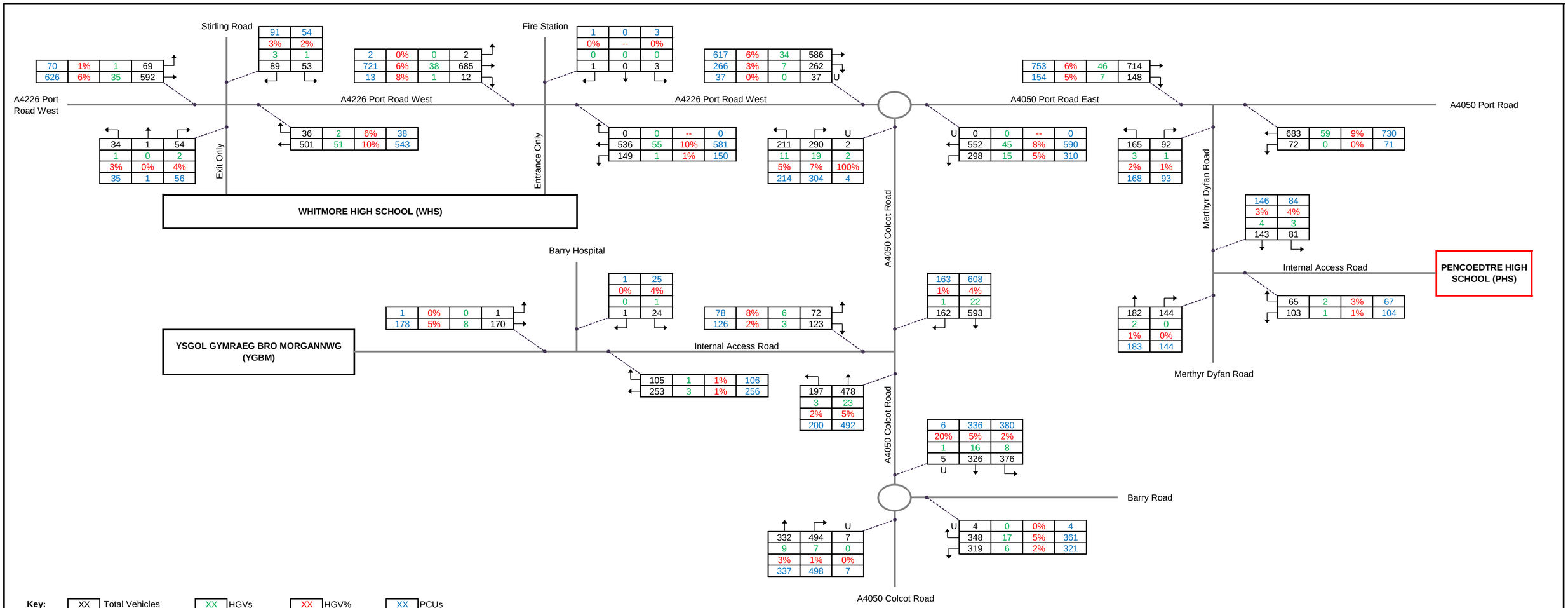

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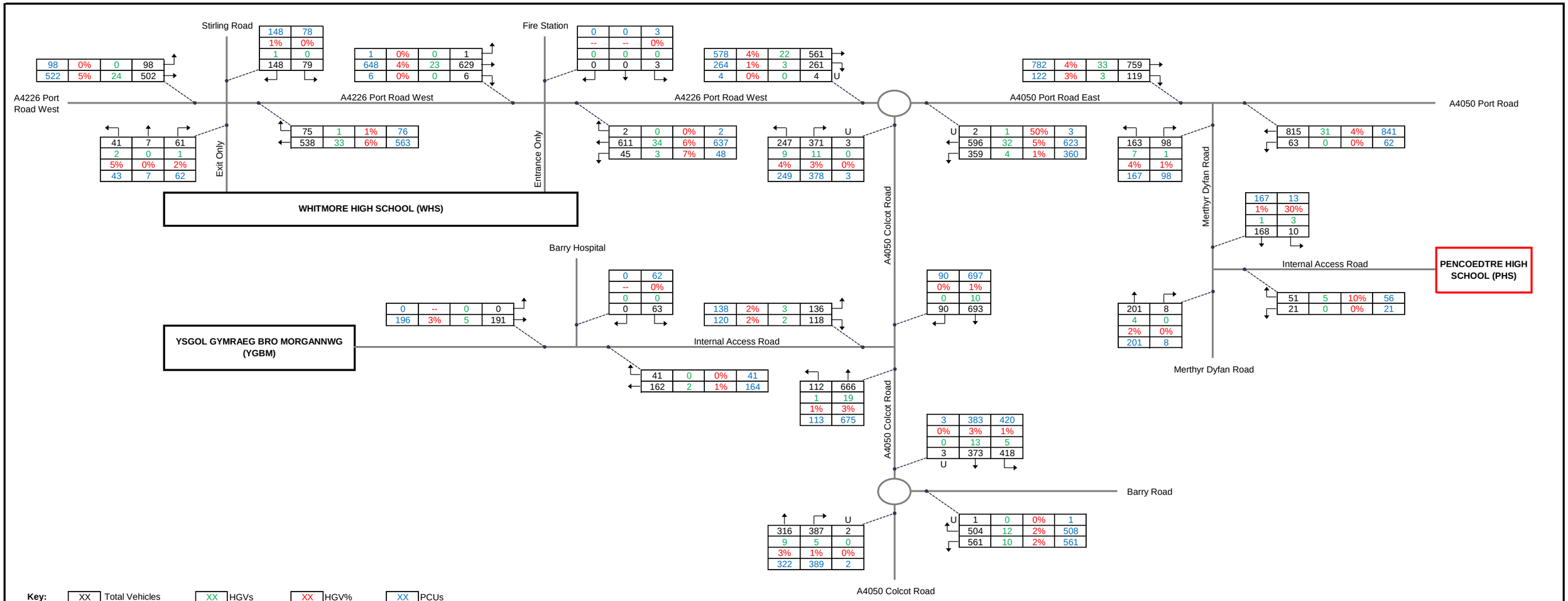
		Title	Traffic Flows - 2018 Base Year: Weekday AM Peak Hour (07:45-08:45)	Checked	SP	
AECOM 1 Callaghan Square Cardiff CF10 5BT	029 2067 4600	Fig No.	2.2	Approved	JD	
	www.aecom.com	Date	26/07/2019	Scale	NTS	



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	www.aecom.com	Date	26/07/2019	Scale	NTS

Notes:

1. Data is derived from traffic surveys undertaken on Wednesday 27th June 2018.
2. Peak hour is the peak hour of traffic generation of Bryn Hafren Comprehensive School (as it was known at the time of the traffic surveys).

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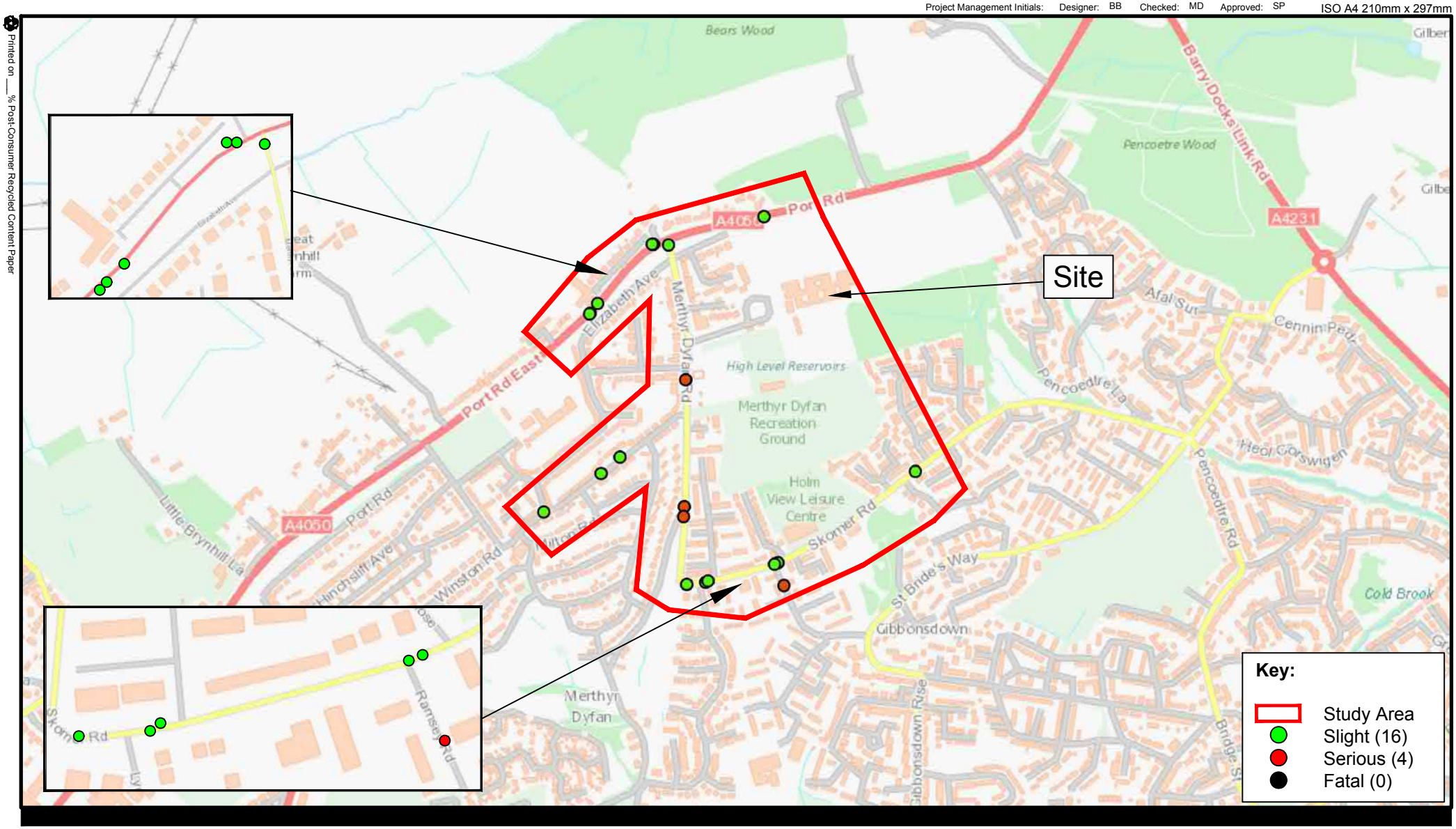

Pencoedtre High School, Barry

Transport Assessment

Figure 2.4: Personal Injury Collision Data Plot

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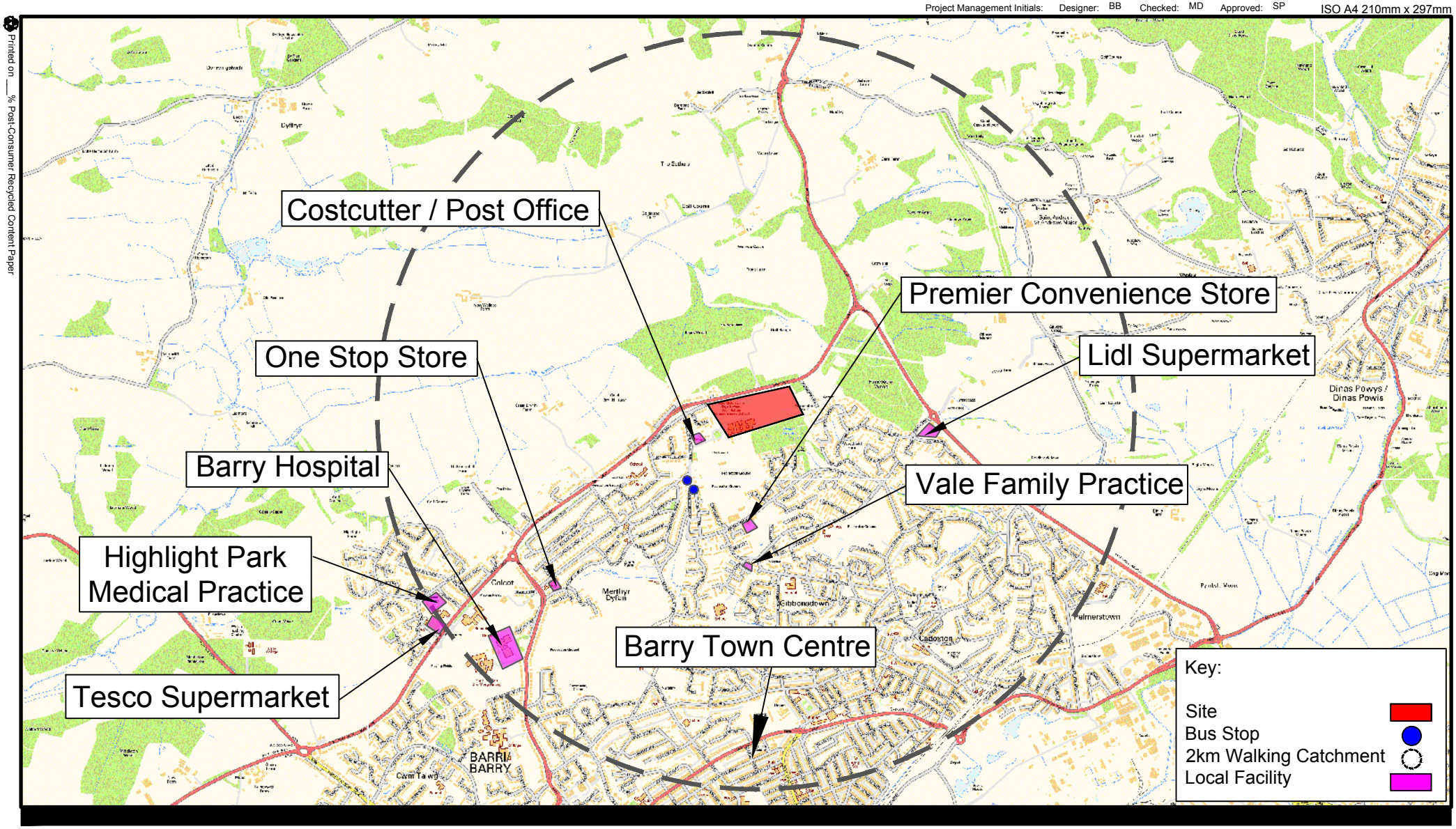

Pencoedtre High School, Barry

Transport Assessment

Figure 2.5: Local Facilities Plan

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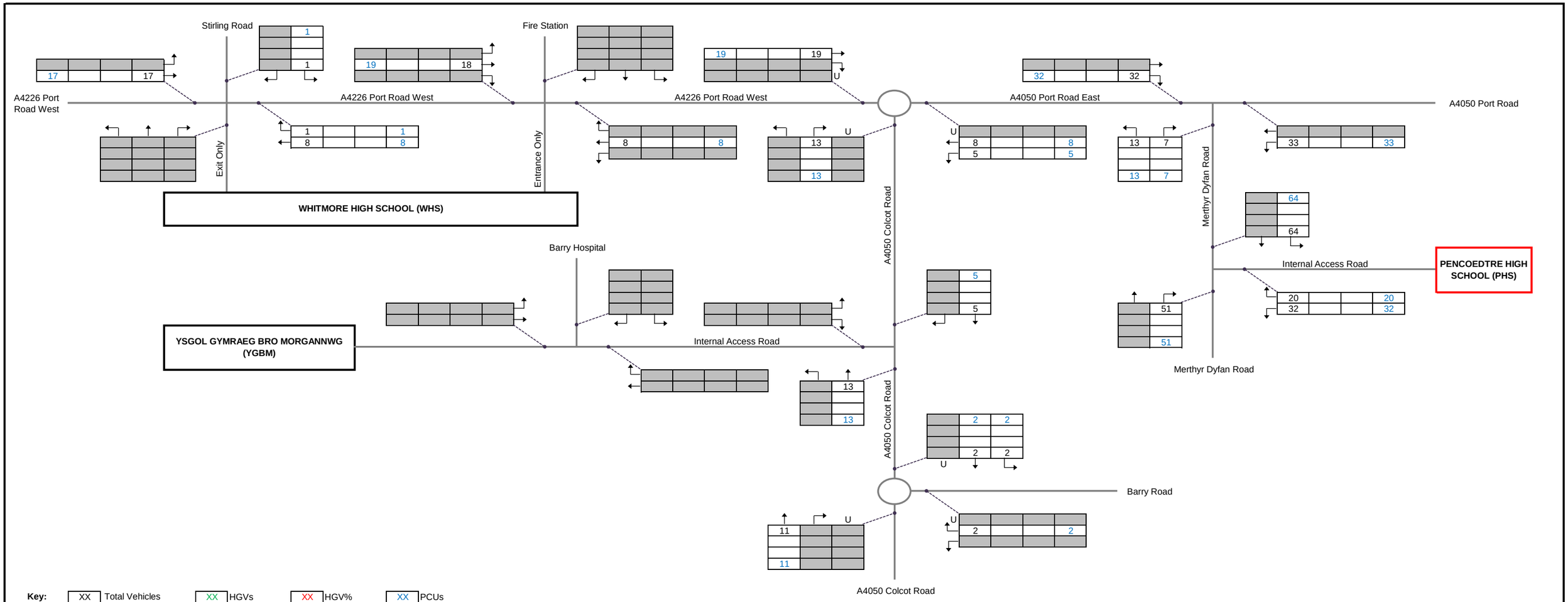

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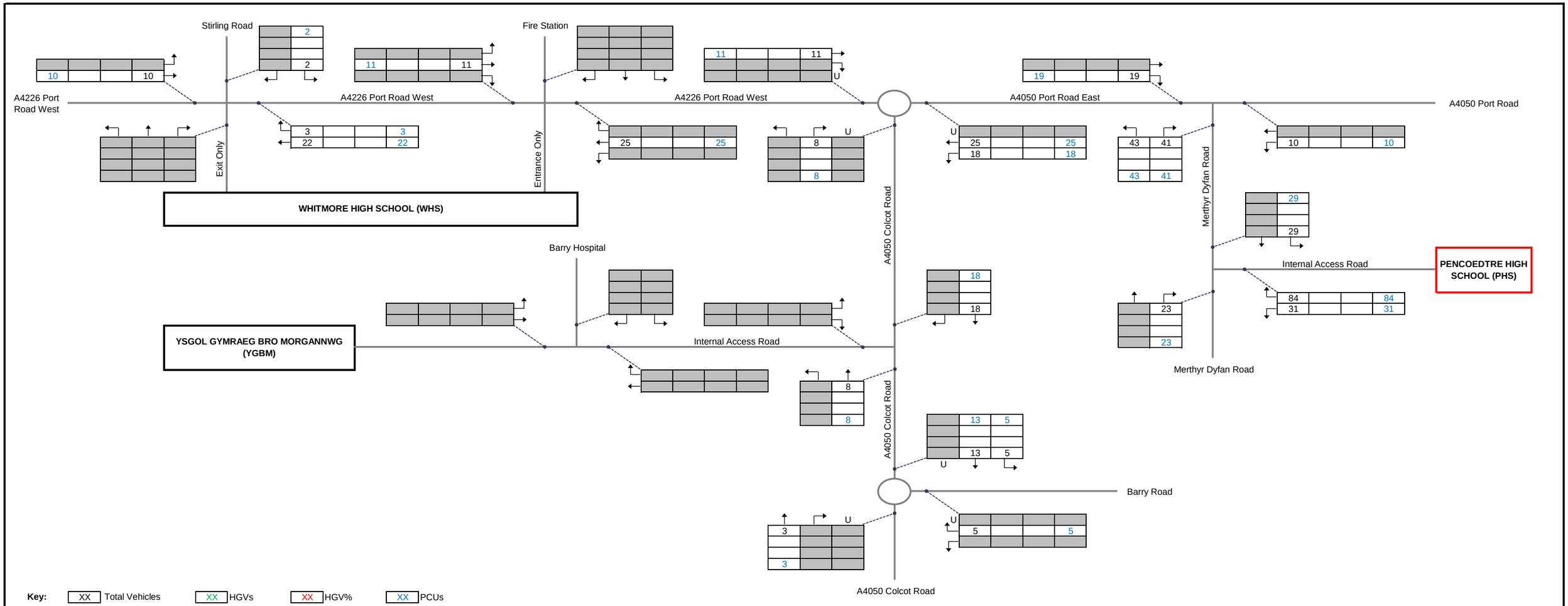

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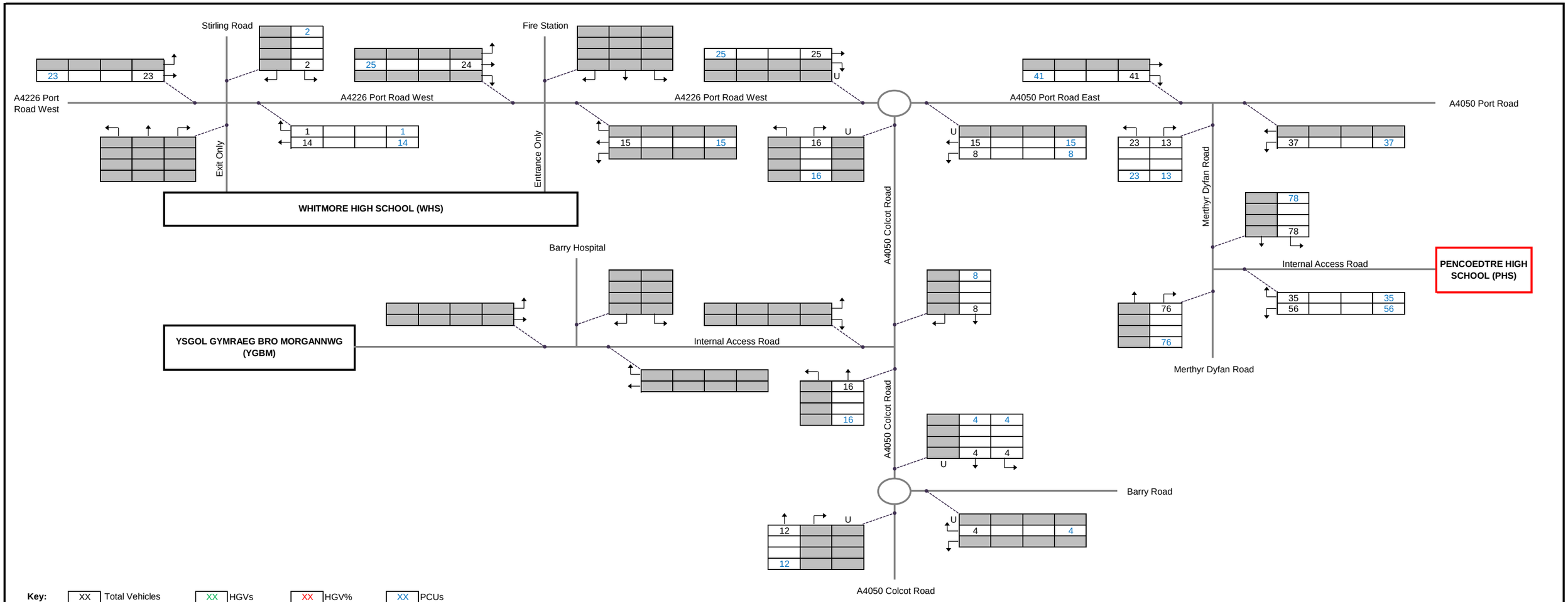

AECOM		Client	Vale of Glamorgan Council	Drawn	MD	**Notes:**
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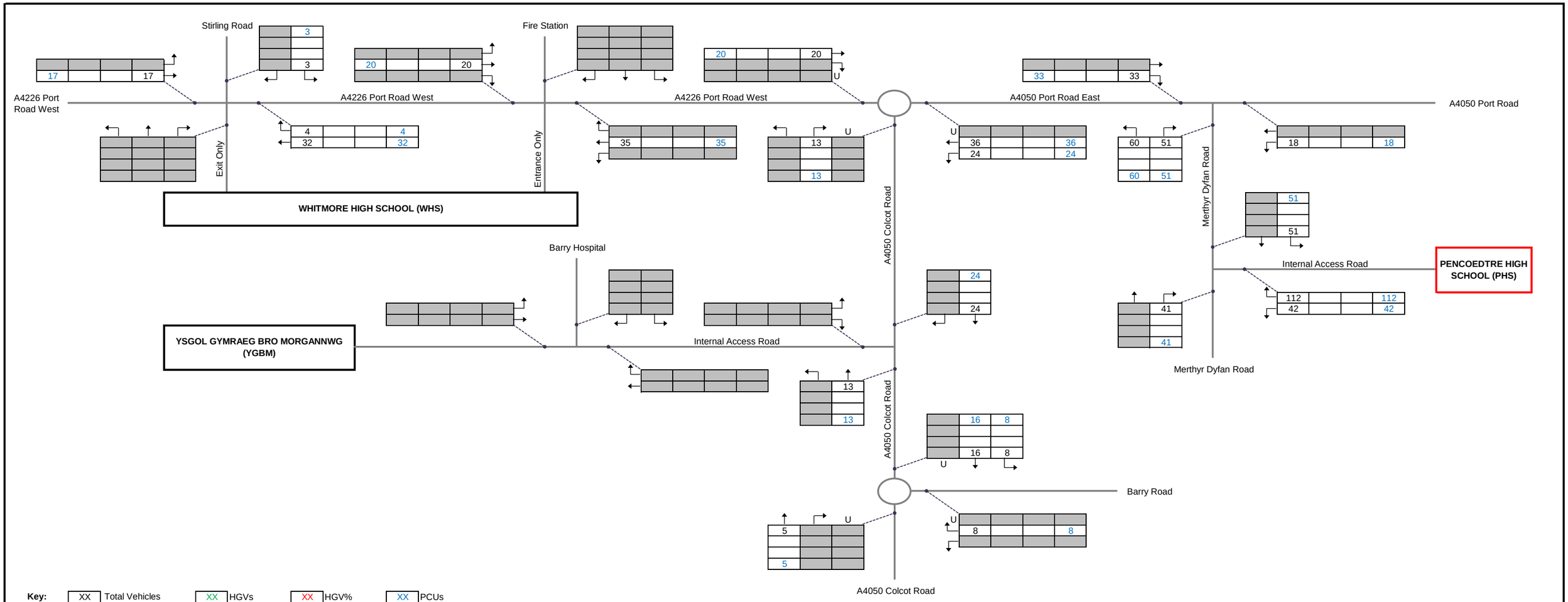

Key: XX Total Vehicles XX HGVs XX HGV% XX PCUs

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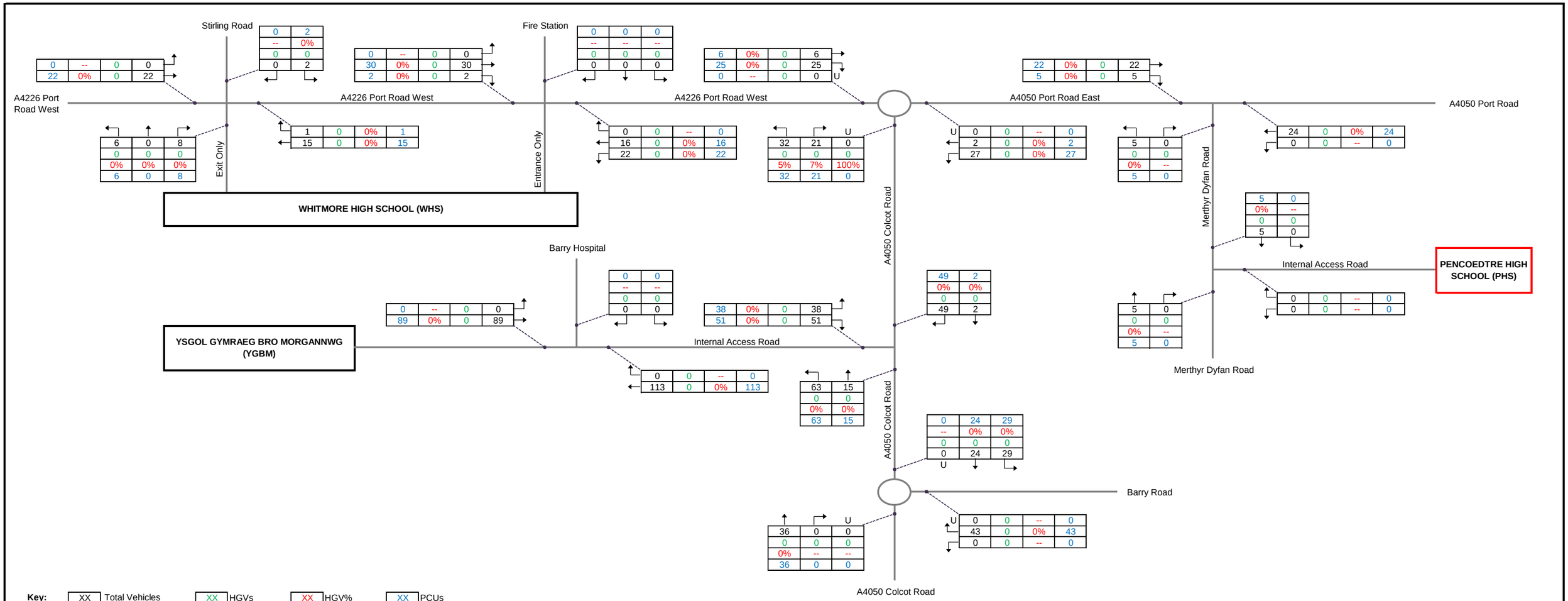
	www.aecom.com	Date	26/07/2019	Scale	NTS

Notes:

1. Traffic associated with additional school population in 2026.
2. Cells highlighted in grey are not considered to be appropriate turning movements for origin/destination.



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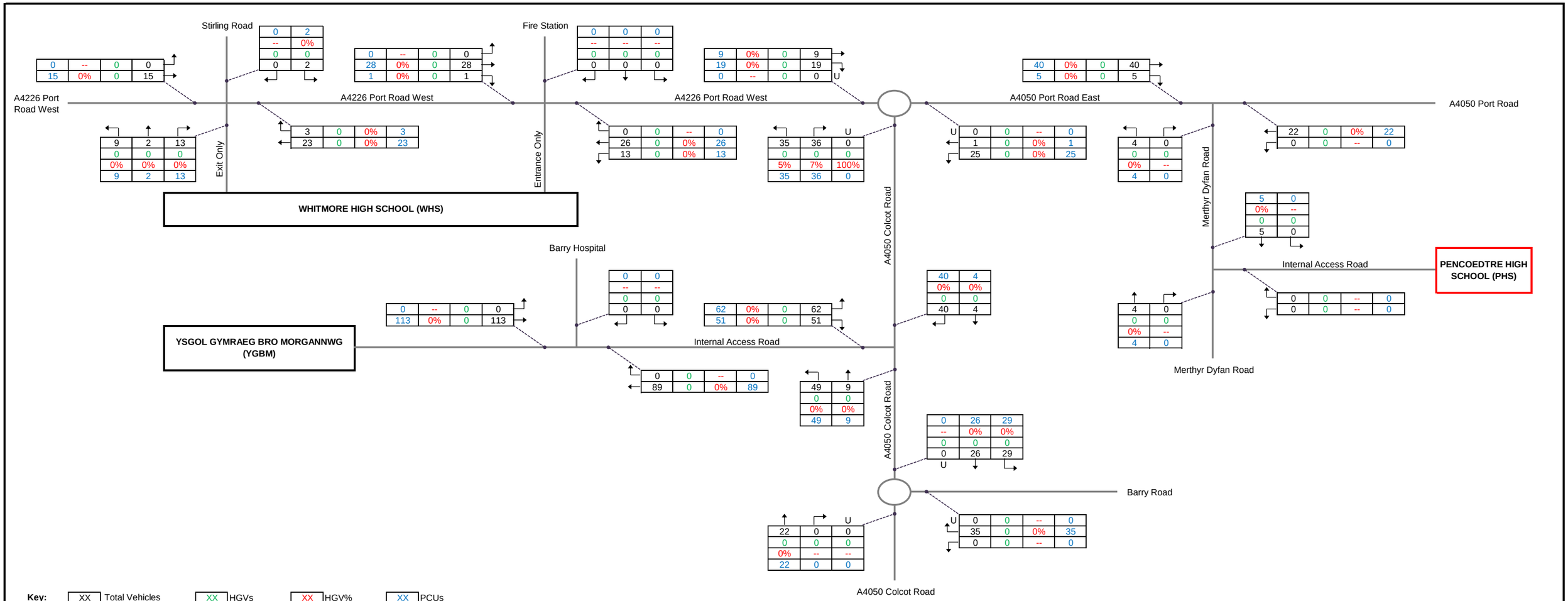

Key: XX Total Vehicles XX HGVs XX HGV% XX PCUs

AECOM		Client	Vale of Glamorgan Council	Drawn	MD	**Notes:**
		Project	Pencoedtre High School, Barry	Verified	SP	1. Includes committed development at Whitmore High School and YGBM.
		Title	Traffic Flows - Committed Development: Weekday PM Peak Hour (14:45-15:45)	Checked	SP	
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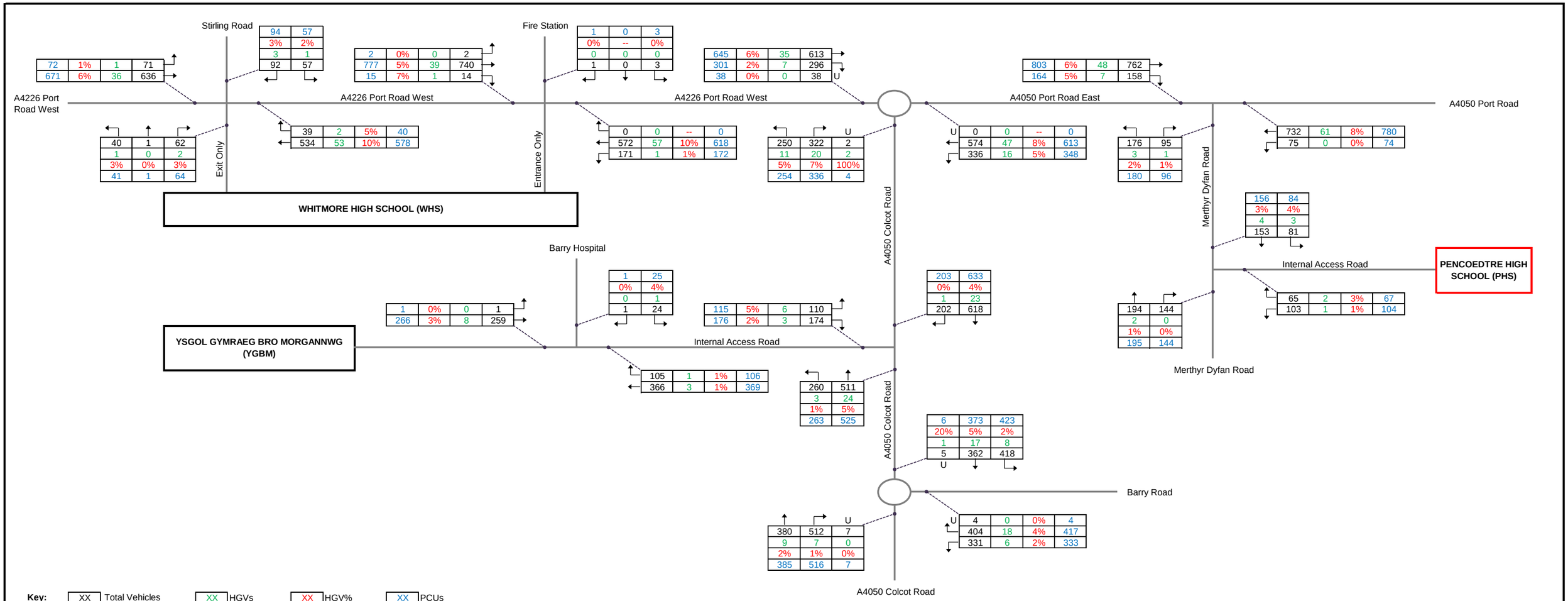

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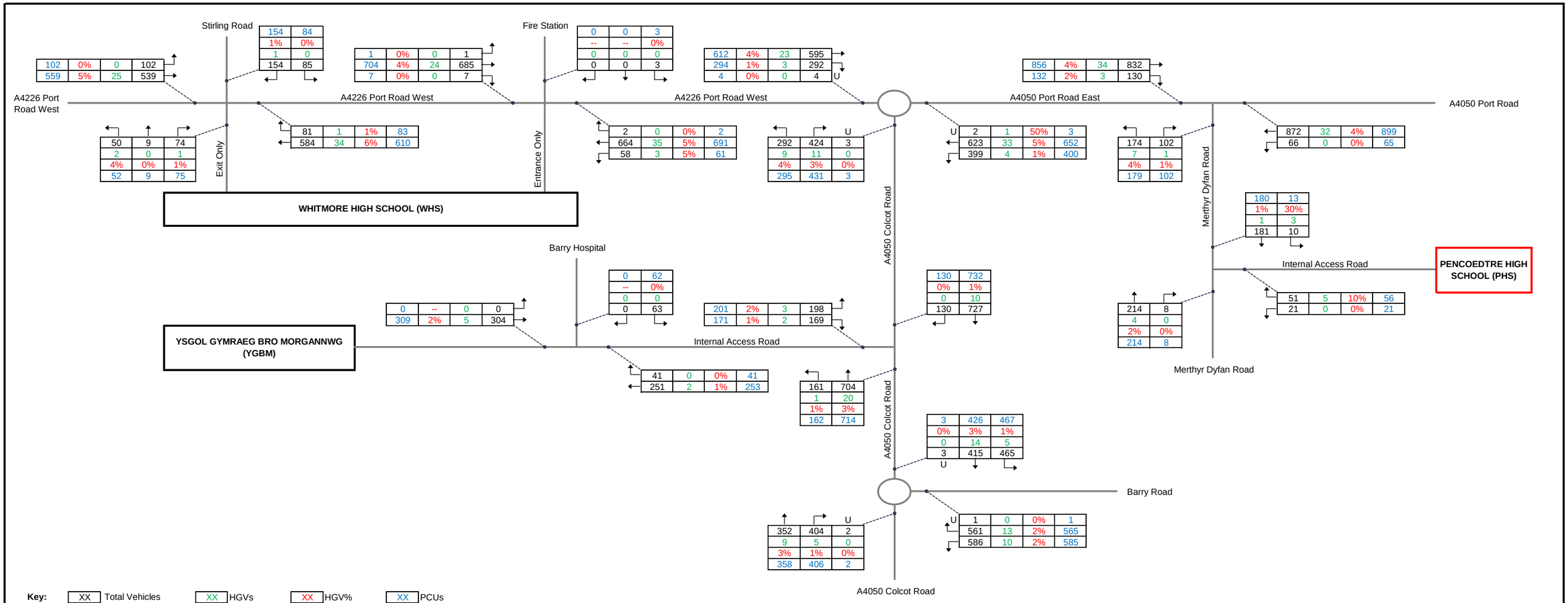

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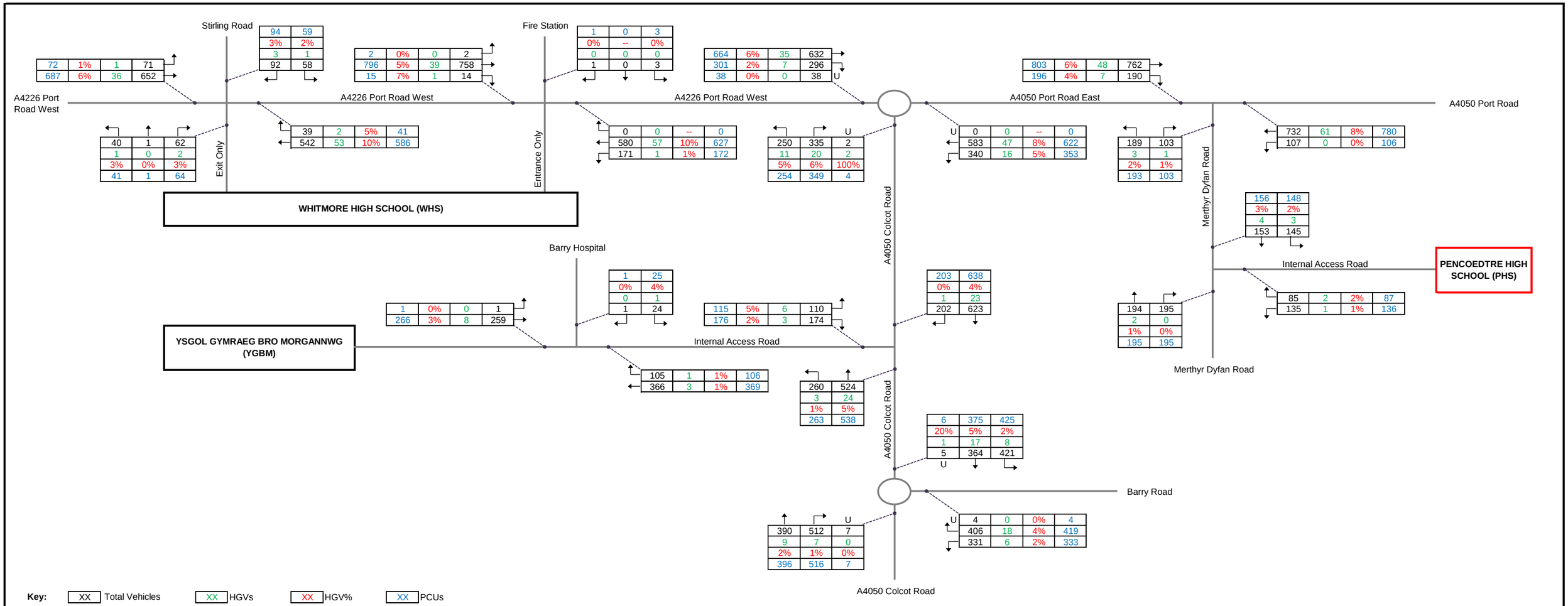
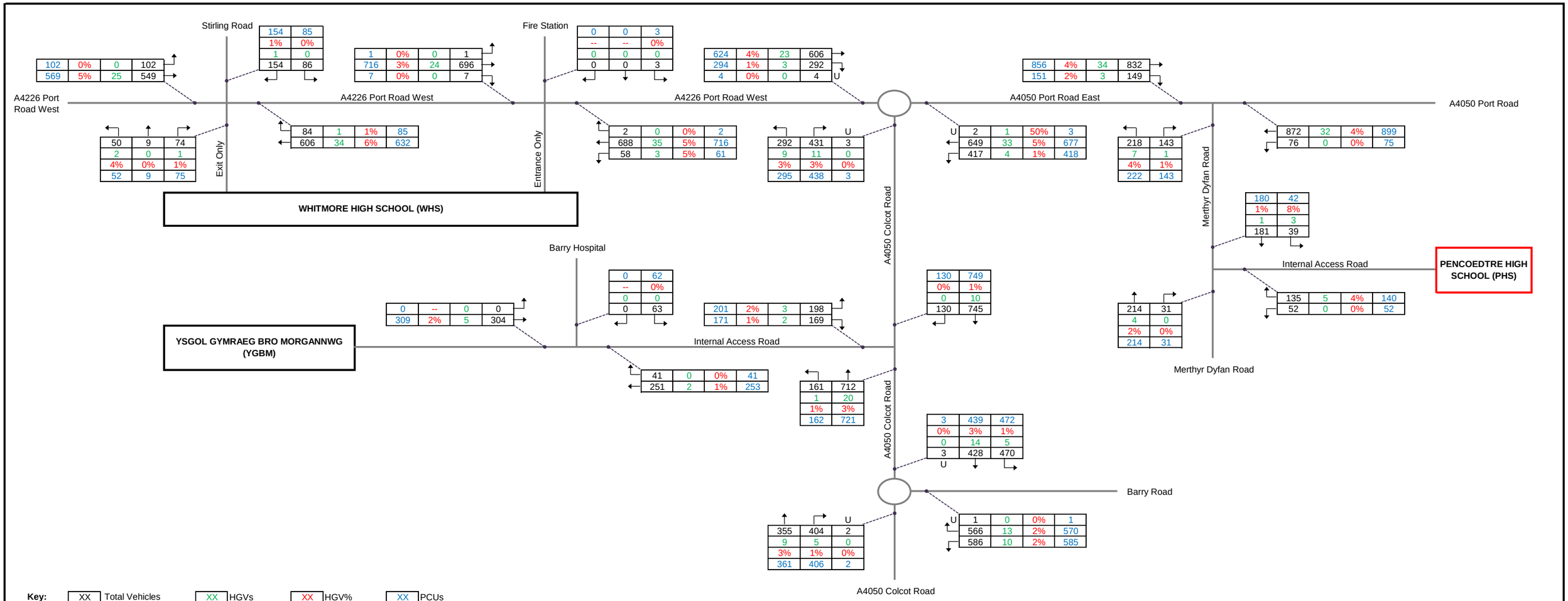
		Project	Pencoedtre High School, Barry	Verified	SP	1. Includes traffic growth and committed development.
		Title	Traffic Flows - 2021 Base: Weekday PM Peak Hour (14:45-15:45)	Checked	SP	
AECOM 1 Callaghan Square Cardiff CF10 5BT	029 2067 4600	Fig No.	6.4	Approved	JD	
	www.aecom.com	Date	26/07/2019	Scale	NTS	



AECOM		Client	Vale of Glamorgan Council	Drawn	MD	**Notes:**
		Project	Pencoedtre High School	Verified	SP	1. Includes traffic growth derived from TEMPro (applied to all movements with the exceptions of movements to/from schools, Barry Hospital and Fire Station at respective site accesses), committed development and the proposed development (in 2021).
		Title	Traffic Flows - 2021 Base + Development: Weekday AM Peak Hour (07:45-08:45)	Checked	SP	
AECOM 1 Callaghan Square Cardiff CF10 5BT	029 2067 4600	Fig No.	6.5	Approved	JD	
	www.aecom.com	Date	26/07/2019	Scale	NTS	

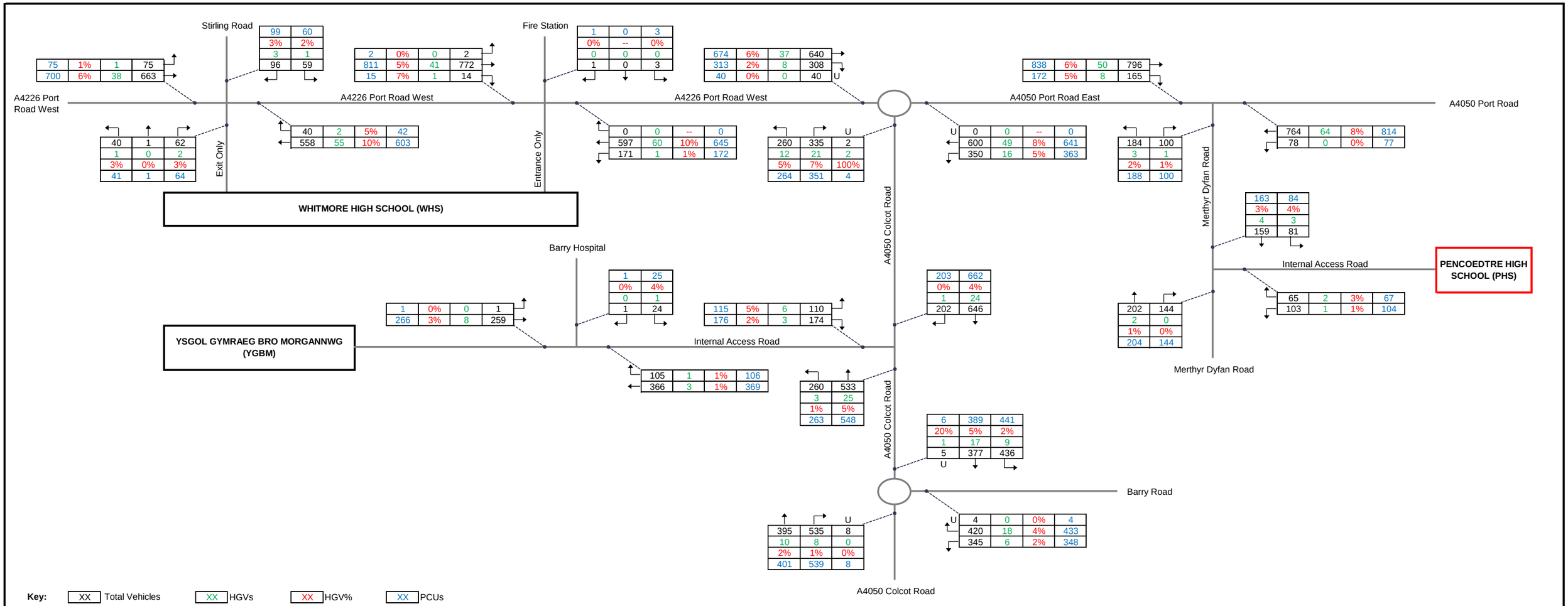


Key: XX Total Vehicles XX HGVs XX HGV% XX PCUs

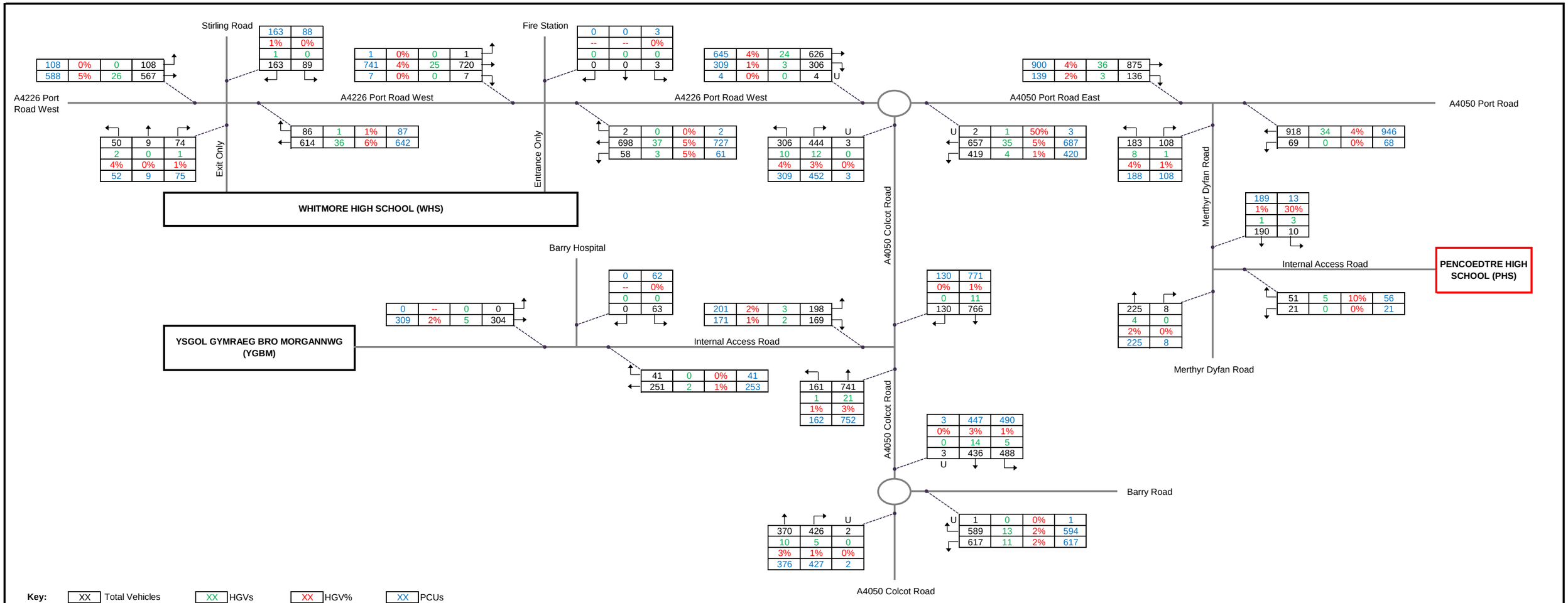
AECOM		Client	Vale of Glamorgan Council	Drawn	MD
		Project	Pencoedtre High School	Verified	SP
		Title	Traffic Flows - 2021 Base + Development: Weekday PM Peak Hour (14:45-15:45)	Checked	SP
AECOM 1 Callaghan Square Cardiff CF10 5BT	029 2067 4600	Fig No.	6.6	Approved	JD
	www.aecom.com	Date	26/07/2019	Scale	NTS

Notes:

1. Includes traffic growth derived from TEMPro (applied to all movements with the exceptions of movements to/from schools, Barry Hospital and Fire Station at respective site accesses), committed development and the proposed development (in 2021).



AECOM		Client	Vale of Glamorgan Council	Drawn	MD	**Notes:**
		Project	Pencoedtre High School, Barry	Verified	SP	1. Includes traffic growth and committed development.
		Title	Traffic Flows - 2026 Base: Weekday AM Peak Hour (07:45-08:45)	Checked	SP	
AECOM 1 Callaghan Square Cardiff CF10 5BT	029 2067 4600	Fig No.	6.7	Approved	JD	
	www.aecom.com	Date	26/07/2019	Scale	NTS	



Key: XX Total Vehicles | XX HGVs | XX HGV% | XX PCUs

AECOM	Client	Vale of Glamorgan Council	Drawn	MD	**Notes:**
	Project	Pencoedtre High School, Barry	Verified	SP	1. Includes traffic growth and committed development.
	Title	Traffic Flows - 2026 Base: Weekday PM Peak Hour (14:45-15:45)	Checked	SP	
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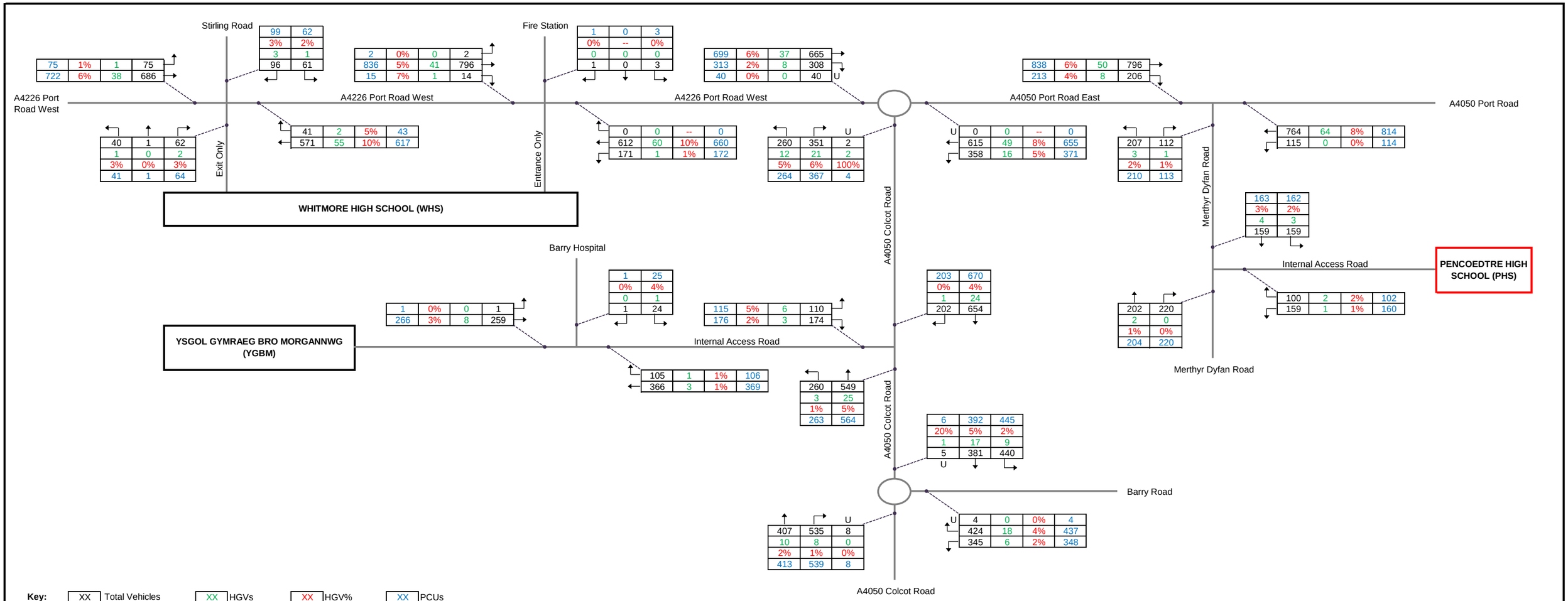
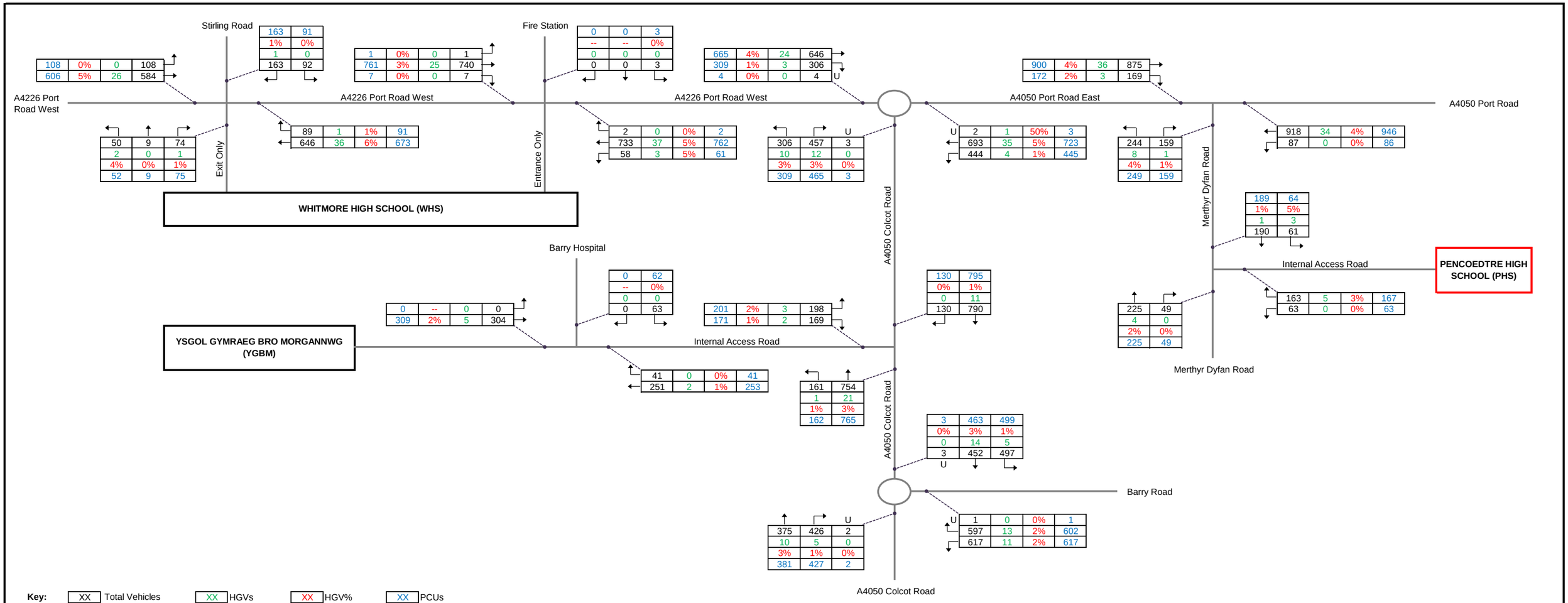
www.aecom.com	Date	26/07/2019	Scale	NTS	



AECOM		Client	Vale of Glamorgan Council	Drawn	MD	**Notes:**
		Project	Pencoedtre High School	Verified	SP	1. Includes traffic growth derived from TEMPro (applied to all movements with the exceptions of movements to/from schools, Barry Hospital and Fire Station at respective site accesses), committed development and the proposed development (in 2026).
		Title	Traffic Flows - 2026 Base + Development: Weekday AM Peak Hour (07:45-08:45)	Checked	SP	
AECOM 1 Callaghan Square Cardiff CF10 5BT	029 2067 4600	Fig No.	6.9	Approved	JD	
	www.aecom.com	Date	26/07/2019	Scale	NTS	



AECOM	Client	Vale of Glamorgan Council	Drawn	MD	**Notes:**
	Project	Pencoedtre High School	Verified	SP	1. Includes traffic growth derived from TEMPro (applied to all movements with the exceptions of movements to/from schools, Barry Hospital and Fire Station at respective site accesses), committed development and the proposed development (in 2026).
	Title	Traffic Flows - 2026 Base + Development: Weekday PM Peak Hour (14:45-15:45)	Checked	SP	
AECOM 1 Callaghan Square Cardiff CF10 5BT	029 2067 4600	Fig No.	6.10	Approved	JD
	www.aecom.com	Date	26/07/2019	Scale	NTS

Appendix 1.1

Transport Assessment Scoping Note

Technical Note

AECOM

Project:	**Pencoedtre High School, Barry**	Job No:	**TBC**
Subject:	**Transport Assessment Scoping Note**		
Prepared by:	**Kirsty Cox (Principal Consultant)**	Date:	**27/06/2019**
Checked by:	**Spiro Panagi (Associate Director)**	Date:	**01/07/2019**
Approved by:	**Spiro Panagi (Associate Director)**	Date:	**02/07/2019**

The following Table sets out the proposed scope of a Transport Assessment (TA) in respect of the proposed redevelopment of a new school building for Pencoedtre High School in Barry, Wales.

1	Site Location and Existing Land Use	Pencoedtre High School is one of three schools within close proximity of each other seeking planning permission for redevelopment, albeit all on different scales. The other two schools are Whitmore High School and Ysgol Gymraeg Bro Morgannwg (YGBM). A plan indicating the locations of all three schools is attached in **Appendix A**. Pencoedtre High School (previously known as Bryn Hafren Comprehensive School, an all-girls school) is a co-educational is located south of the A4050 and is accessed via Merthyr Dyfan Road. The A4050 Calcot Road links Barry and Cardiff. The site is approximately 10 miles from Cardiff, to the northeast, and approximately 13 miles to Cowbridge in the northwest. The sites of Whitmore High School and Ysgol Bro Morgannwg are approximately 2 miles southwest of the Pencoedtre High School site. The Pencoedtre High School has existing consented capacity for a total of 1,331 pupils. At present 846 pupils are enrolled within the school.
2	Planning History	The development site is located in Barry, in the Vale of Glamorgan. The development will involve the redevelopment of the existing school site for a new facility. AECOM have previously been providing advice on this scheme up to RIBA Stage 2; this includes scoping discussions and baseline desk studies. We have assessed the current highway network and have also commissioned traffic surveys across the network for three local school proposals. AECOM has previously submitted a Scoping Note for this development site, in November 2018, this was as part of previous proposals to redevelop some of the existing site. The current proposals seek to redevelop the site for a new school facility. The previous Scoping Note was reviewed and informed by Local Highway Authority Officer comments. Given that the content of the previous Scoping Notes were agreed, we have retained this format and reused it for this Note, thereby proposing an already acceptable approach. A copy of the previous Scoping Note (November 2018) correspondence is contained with **Appendix B** for ease of reference.
3	Development Proposal	The new school site is proposed to enrol a total capacity of 1250, 200 of which will be sixth form. However, there will be an initial intake of up to 1,100 pupils which will include the 200 Sixth Form students). The remaining 150 places will

		follow later in the school programme and will be set out in more detail in the TA. Proposals include the following: ▪ A new school building over 3-4 storeys located south of the existing school building; ▪ The current sports fields to the north, adjacent to Port Road, will be retained. ▪ Multi Use Games Areas (MUGAs) which are suitable for PE and other lessons, as well as informal play at break times, and car parking will replace the current school building. The sports facilities can be used by the local community outside of school hours. The eastern land adjacent to the school site is allocated for residential development. This is not connected to this application and is set out for informative purposes only. The TA will include the following: ▪ Details of the access arrangements; ▪ Internal transport layout for the site (including consideration of the potential for bus stops, layovers and circulation; parents drop off points and pedestrian circulation), consideration will be given to the Risk Assessment undertaken by officer of the Vale Council (November 2015); ▪ Cycle and car parking provision (staff and visitor); and ▪ Swept Path Analysis (SPA) to demonstrate that larger vehicles (school buses, refuse, delivery and emergency) can be accommodated.
4	Planning Policy Review	The context of the development proposals will be considered in relation to the following policy and guidance: ▪ Planning Policy Wales (PPW) 10; ▪ Technical Advice Note (TAN) 18: Transport, published in March 2007; ▪ The Wales Transport Strategy, published in April 2008; ▪ National Transport Finance Plan, published in September 2015; ▪ Active Travel (Wales) Act 2013; ▪ Wellbeing of Future Generations (Wales) Act 2015; ▪ Vale of Glamorgan Local Development Plan (LDP) 2011-2026 [adopted June 2017]; ▪ Vale of Glamorgan Local Transport Plan (LTP) 2015-2030; and ▪ Supplementary Planning Guidance (SPG) to the LDP, including LDP 5 – Parking Standards. The TA will clearly demonstrate the development's compliance to the above policies and corresponding objectives. This will be demonstrated within the policy chapter (following the setting out of the development proposals), linking specific development proposals to the policies and their objectives. A summary will be provided within the TA conclusions.
5	Existing Situation and Site Accessibility	The TA will include the following: ▪ Description of the site location and existing usage; ▪ Description of the local highway network, including carriageway widths, speed limits, street lighting, etc; ▪ Description of the existing highway operational conditions with reference to traffic survey data, along with queuing conditions at key junctions;

		▪ Analysis of Personal Injury Collision (PIC) data; ▪ Description of existing walking/cycling facilities; ▪ Description of public transport services; and ▪ Identification of key local facilities and their accessibility by sustainable modes.
6	Data Collection	The previous proposals were, at that time, being progressed in a similar timeline to the other two neighbouring schools. Therefore baseline data was being collected, this included PIC data and traffic surveys. It is proposed that these are re-used within this TA given that they are recent. PIC data was obtained from the Welsh Government for the period from 1st January 2013 to 30th June 2018 (a 5½ year period, the most recent for which data was available), covering an appropriate study area. This will be analysed and reported upon within the TA. Traffic surveys have been undertaken on the local highway network surrounding the development to identify the existing traffic generation of the school and highway operational conditions. At the time of the traffic surveys the school was operating as Bryn Hafren Comprehensive School and had 846 pupils enrolled and therefore, for the purposes of the TA, this will form the base scenario (existing situation). The traffic surveys included manual classified counts of extended weekday peak hour traffic (07:00-10:00hrs and 14:00-18:00hrs), to ensure that school start and finish times were captured. The locations of the surveys are shown on the plan at **Appendix C** These locations are specifically: 1. A4050 Port Road E / Merthyr Dyfan Road (signal-controlled junction); 2. Merthyr Dyfan Road / Ysgol Gyfun Bryn Hafren School (priority junction with ghost island right-turn lane); 3. A4050 Port Road E / A4226 Port Road W / A4050 Colcot Road (roundabout junction); 4. A4226 Port Road W / Barry Comprehensive School access in only (priority junction); 5. A4226 Port Road W / Barry Comprehensive School exit / Sterling Road (signal-controlled junction); 6. Internal access road serving Hospital / Internal access road serving Ysgol Gymraeg Bro Morgannwg (priority junction); 7. A4050 Colcot Road / Access road to school and hospital (signal-controlled junction); and 8. A4050 Colcot Road / Barry Road (roundabout junction). The traffic surveys were commissioned and undertaken on Wednesday 27th June 2018 which is confirmed, by national guidelines, as a neutral day and month. AECOM has performed checks to ensure that the data is complete and with no obvious errors. The junction traffic data has been used to develop a network study area; this will be used to assess and forecast traffic impact of the proposals and to inform junction capacity assessments.
7	Trip Generation	The traffic surveys will be used to establish the traffic generation of the existing school. From this information, it will then be possible to apply pro-rata growth to forecast the traffic generation of the proposed school.
8	Trip Distribution	The distribution of school development traffic will be based on the existing school traffic distributions derived from the traffic surveys.
9	Traffic Impact Assessment	Assessment Scenarios:

		▪ The TA will assess the impact of the development proposals for the school opening year, (2021) both without and with the development proposals. ▪ The 'without development' scenario will include traffic growth (based on growth factors derived from TEMPro), the existing school situation with associated traffic patterns and traffic from neighbouring committed development. This is considered the future baseline. ▪ The 'with development' scenario will be as the 'without development', but with the previous Bryn Hafren Comprehensive School traffic replaced by the proposed Pencoedtre High School traffic. These flows will be factored up by applying a factor to the flows based on the growth in pupil numbers and the resulting impact on the network will be assessed ▪ The morning and evening weekday drop-off/pick-up hours will be considered. The peak hours for development traffic generation will be consistent with the peak hours selected for assessment. ▪ Traffic growth factors derived from TEMPro (Version 7.2) will be applied to the traffic data to establish traffic flows in the opening and forecast years. Impact Assessment: ▪ The assessment will identify the percentage impact of the proposed development in terms of traffic flows at the principal access junctions identified in Section 6. ▪ Should the increase in traffic at these junctions be considered to warrant capacity assessment, this will be undertaken using the industry-standard TRL software program 'Junctions 9' (for priority and roundabout junctions) and JCT Consultancy software program 'LinSig'.
10	Transport Implementation Strategy (TIS)	The TA will include a TIS, which will consider potential measures, and appraise those already being implemented by the wider site, to increase the mode share of sustainable travel modes by staff and pupils at the school. In particular, the following will be considered: ▪ Feasibility of walking and cycling routes in the surrounding areas including consideration for potential improvements; ▪ Cycle parking within the school grounds; ▪ Bus drop off points and circulation within the site; The School does not currently have an existing Travel Plan and therefore, a draft travel plan will be produced for the proposed site with appropriate recommendations and actions. This will be provided alongside the TA, to support the planning application.
11	Construction Traffic	The TA will include discussion of potential routeing arrangements and estimates of construction traffic.

Appendix A

Location Plans


Pencoedtre High School
Coastlands
Vale of Glamorgan Flying Start
The Colcot Arms
Whitmore High School
Barry comprehensive school
Superstore
The Barry Hospital
Oak Field Primary School
YGG Bro Morgannwg
Buttrills Community Association
Jenner Park
Cardiff & Vale


Highlight Park Medical Practice
Barry comprehensive school
Tesco Superstore
The Barry Hospital
Ysgol Gymraeg Bro Morgannwg
Cardiff & Vale College - Colcot Road
Highfield Rd
Colcot Rd
Greenbanks Dr
Woodham Park
Conway Dr
Elam Cl
Enfield Dr
Stirling Rd
Lakin Dr
Cambourne Cl
Highlight Ln
Port Rd W
A4226


A4050
Port Rd
Port Rd E
Glyndwr Cl
Bryn Hafren
Comprehensive School
Merthyr Dyfan
Sub Post Office
Blyth Cl
Mountbatten Cl
Francis Rd
Wheelz
Cook Rd

Appendix B

Transport Assessment Scoping Note & LHA Correspondence, November 2018

Technical Note

Project:	**Pencoedtre High School, Barry**	Job No:	**60571312**
Subject:	**Transport Assessment Scoping Note**		
Prepared by:	**Kirsty Cox (Principal Consultant)**	Date:	**21/11/2018**
Checked by:	**Spiro Panagi (Associate Director)**	Date:	**21/11/2018**
Approved by:	**Spiro Panagi (Associate Director)**	Date:	**21/11/2018**

Scoping Note Revision A following Local Highway Authority Requested Additions 21/11/2018

The following Table sets out the proposed scope of a Transport Assessment (TA) in respect of the proposed redevelopment of Pencoedtre High School in Barry, Wales.

1	Site Location and Existing Land Use	Pencoedtre High School is one of three schools within close proximity of each other seeking planning permission for redevelopment, albeit all on different scales. The other two schools are Whitmore High School and Ysgol Gymraeg Bro Morgannwg (YGBM). A plan indicating the locations of all three schools is attached in **Appendix A**. Pencoedtre High School (previously known as Bryn Hafren Comprehensive School, an all-girls school) is a co-educational is located south of the A4050 and is accessed via Merthyr Dyfan Road. The A4050 Calcot Road links Barry and Cardiff. The site is approximately 10 miles from Cardiff, to the northeast, and approximately 13 miles to Cowbridge in the northwest. The sites of Whitmore High School and Ysgol Bro Morgannwg are approximately 2 miles southwest of the Pencoedtre High School site.
2	Planning History	The development site is located in Barry, in the Vale of Glamorgan. The development will involve the refurbishment of the existing school site. AECOM has been providing advice on this scheme up to RIBA Stage 2; this includes scoping discussions and baseline desk studies. We have assessed the current highway network and have also commissioned traffic surveys across the network for three local school proposals.
3	Development Proposal	The new school site is proposed to enrol 1,100 pupils, 200 of which are Sixth Form. Proposals include the following: ▪ A new sports hall that will be linked to the existing sports hall; and ▪ Refurbishment to some existing parts of school site including the configuration of a new main entrance to create a focal point for the school and relocation of teaching facilities to provide a more coherent layout. The eastern adjacent land to the school site is allocated for residential development. The TA will include the following: ▪ details of the access arrangements; ▪ internal transport layout for the site (including consideration of the potential for bus stops, layovers and circulation; parents drop off points and pedestrian circulation), consideration will be given to the Risk Assessment undertaken by officer of the Vale Council (November 2015);

		▪ Cycle and car parking provision (staff and visitor); and ▪ Swept Path Analysis (SPA) to demonstrate that larger vehicles (school buses, refuse, delivery and emergency) can be accommodated.
4	Planning Policy Review	The context of the development proposals will be considered in relation to the following policy and guidance: ▪ Planning Policy Wales (PPW); ▪ Technical Advice Note (TAN) 18: Transport, published in March 2007; ▪ The Wales Transport Strategy, published in April 2008; ▪ National Transport Finance Plan, published in September 2015; ▪ Active Travel (Wales) Act 2013; ▪ Wellbeing of Future Generations (Wales) Act 2015;Vale of Glamorgan Local Development Plan (LDP) 2011-2026 [adopted June 2017]; ▪ Vale of Glamorgan Local Transport Plan (LTP) 2015-2030; and ▪ Supplementary Planning Guidance (SPG) to the LDP, including LDP 5 – Parking Standards. The TA will clearly demonstrate the development's compliance to the above policies and corresponding objectives. This is will be demonstrated within the policy chapter (following the setting out of the development proposals), linking specific development proposals to the the policies and their objectives.A summary will be provided within the TA conclusions.
5	Existing Situation and Site Accessibility	The TA will include the following: ▪ Description of the site location and existing usage; ▪ Description of the local highway network, including carriageway widths, speed limits, street lighting, etc; ▪ Description of the existing highway operational conditions with reference to traffic survey data, along with queuing conditions at key junctions; ▪ Analysis of Personal Injury Collision (PIC) data; ▪ Description of existing walking/cycling facilities; ▪ Description of public transport services; and ▪ Identification of key local facilities and their accessibility by sustainable modes.
6	Data Collection	PIC data will be obtained from the Welsh Government for the latest five year period, covering an appropriate study area. Traffic surveys have been undertaken on the local highway network surrounding the development to identify the existing traffic generation of the school and highway operational conditions. At the time of the traffic surveys the school was operating as Bryn Hafren Comprehensive School and had 878 pupils enrolled and therefore, for the purposes of the TA, this will form the base scenario (existing situation). The traffic surveys included manual classified counts of extended weekday peak hour traffic (07:00-10:00hrs and 14:00-18:00hrs), to ensure that school start and finish times were captured. The locations of the surveys are shown on the plan at **Appendix B**. These locations are specifically: 1. A4050 Port Road E / Merthyr Dyfan Road (signal-controlled junction); 2. Merthyr Dyfan Road / Ysgol Gyfun Bryn Hafren School (priority junction with ghost island right-turn lane); 3. A4050 Port Road E / A4226 Port Road W / A4050 Colcot Road

		(roundabout junction); 4. A4226 Port Road W / Barry Comprehensive School access in only (priority junction); 5. A4226 Port Road W / Barry Comprehensive School exit / Sterling Road (signal-controlled junction); 6. Internal access road serving Hospital / Internal access road serving Ysgol Gymraeg Bro Morgannwg (priority junction); 7. A4050 Colcot Road / Access road to school and hospital (signal-controlled junction); and 8. A4050 Colcot Road / Barry Road (roundabout junction). The traffic surveys were commissioned and undertaken on Wednesday 27th June 2018 which is confirmed, by national guidelines, as a neutral day and month. AECOM has performed checks to ensure that the data is complete and with no obvious errors. The junction traffic data has been used to develop a network study area; this will be used to assess and forecast traffic impact of the proposals and to inform junction capacity assessments.
7	Trip Generation	The traffic surveys will be used to establish the traffic generation of the existing school. From this information, it will then be possible to apply pro-rata growth to forecast the traffic generation of the proposed school.
8	Trip Distribution	The distribution of school development traffic will be based on the existing school traffic distributions derived from the traffic surveys.
9	Traffic Impact Assessment	Assessment Scenarios: ▪ The TA will assess the impact of the development proposals for the school opening year, (2021) both without and with the development proposals. ▪ The 'without development' scenario will include traffic growth (based on growth factors derived from TEMPro), the existing school situation with associated traffic patterns and traffic from neighbouring committed development. This is considered the future baseline. ▪ The 'with development' scenario will be as the 'without development', but with the previous Bryn Hafren Comprehensive School traffic replaced by the proposed Pencoedtre High School traffic. These flows will be factored up by applying a factor to the flows based on the growth in pupil numbers and the resulting impact on the network will be assessed ▪ The morning and evening weekday drop-off/pick-up hours will be considered. The peak hours for development traffic generation will be consistent with the peak hours selected for assessment. ▪ Traffic growth factors derived from TEMPro (Version 7.2) will be applied to the traffic data to establish traffic flows in the opening and forecast years. Impact Assessment: ▪ The assessment will identify the percentage impact of the proposed development in terms of traffic flows at the principal access junctions identified in Section 6. ▪ Should the increase in traffic at these junctions be considered to warrant capacity assessment, this will be undertaken using the industry-standard TRL software program 'Junctions 9' (for priority and roundabout junctions) and JCT Consultancy software program 'LinSig'.
10	Transport Implementation Strategy (TIS)	The TA will include a TIS, which will consider potential measures, and appraise those already being implemented by the wider site, to increase the mode share of sustainable travel modes by staff and pupils at the school. In

		particular, the following will be considered: ▪ Feasibility of walking and cycling routes in the surrounding areas including consideration for potential improvements; ▪ Cycle parking within the school grounds; ▪ Bus drop off points and circulation within the site; Determine if a Travel Plan exists for the current site, the outcome of this will be considered in the production of a draft travel plan for the proposed site with appropriate recommendations and actions.
11	Construction Traffic	The TA will include discussion of potential routeing arrangements and estimates of construction traffic.

Good afternoon [redacted],

Thank you for providing us with your observations and requests for additional input to our TA scoping report.

We apologise for not replying sooner, in the time which has passed since our exchange the projects have progressed through business case and contractor tender process, we are now preparing the TA document for submission. We have reviewed the input and can confirm that overall we have covered, or have now adjusted our approach to meet with your requests.

We have attached updated scoping reports to which consider the points raised, for ease of reference we have also responded directly to the points you raised in your email (see the red text entries below).

I trust that this meets with your approval and we look forward to speaking with you again soon.

Many Thanks,

[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: [redacted]
To: [redacted]
Cc: [redacted]
Subject: FW: Vale of Glamorgan Schools Scoping Notes - AE Response

Morning [redacted]. I have been asked to have a quick look at the attached TA scoping notes that you have proposed and would make the following comments in conjunction with my Passenger Transport Manager which we feel should be included.

1 No mention of how active travel measures / routes will be incorporated into the school and surrounding areas to encourage to walk / cycle to school rather than be brought by car (part of the Active Travel Act 2013 and Well-being of Future Generations (Wales) Act 2015 and probably in the new PPW10

The Wellbeing of Future Generations (Wales) Act 2015 has now been added to the list of policy documents in the scoping notes. All policies will be reviewed with regards to sustainable travel and the incorporation of active travel measures to encourage those modes of travel to school, with a focus on how the development complies with such policies and objectives.

2 No mention of cycle parking within the school

Cycle parking is a standard item inherent within a TA, however, for reassurance a sentence has been added into the scoping note to be clear that parking will be addressed as part of the TA.

3 No mention of home to school transport usage and possible layover areas and turning facilities for busses

We would assume from this relates to school bus services? This will be considered for all schools. In the case of Pencoedtre, it is noted that the Vale undertook a risk assessment (Nov 2015) and produced a proposed bus layby design for the existing Pencoedtre HS and recommends the restriction of parents dropping off pupils due to congestion and safety issues. We will ensure that this is addressed with the TA and it will lead to further discussions with the LHA to ensure concerns are ameliorated, resulting in agreed measures that are realistic and appropriate for the school.

4 No mention of staff parking facilities

As with cycle parking, this is a standard inherent TA item and will be addressed as part of the TA. To provide further comfort the Scoping note has been updated to reflect this.

5 No mention of dropping off points for parents and how this will affect the surrounding streets / roads and if there is a need for Traffic Regulation Orders

There will be a full walkover site audit carried out and the findings will be included as part of the TA. This will include the consideration for drop off points for parents and existing TROs (and whether more will be required as part of the proposals)

6 Is speeding an issue within the vicinity which would discourage walking and cycling

Site observations will be undertaken as part of the TA with findings reported.

7 No mention of risk assessments when walking to school in accordance with the Learner Travel Statutory Provision and Operational Guidance June 2014 where authorities Chapter 5 where Local authorities are under a legal duty to assess the travel needs of learner who walk to school

This appears to be specifically related to the Local Authority although it can be picked up with the education department, but it is currently outside of our brief.

8 Any offsite improvements needed to facilitate walking and cycling to school to facilitate the above

This will be included as standard within the Transport Implementation Strategy (TIS) chapter of the TA (this has been updated in the scoping documents for clarity).

9 If there are existing Travel Plans in each of the schools then they should be reviewed for future use (if appropriate) or development and adoption (i.e. if no existing plan is in place).

This will be confirmed with the education department for each school, the outcome of this will be considered in the production of the TA and appropriate action recommended. The scoping note has been updated to reflect this to be provided reassurance.

[redacted]

[redacted]

From: [redacted]
Sent: [redacted]
To: [redacted]
Cc: [redacted]
Subject: FW: Vale of Glamorgan Schools Scoping Notes

Hi [redacted]

As per my previous email, please see attached Transport Assessment Scoping Notes for Whitmore High School, Ysgol Gymraeg Bro Morgannwg and Pencoedtre High School.

If you have any queries or would like to discuss further, please do not hesitate to contact either myself or [redacted].

Kind Regards,

[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Vale of Glamorgan Schools Scoping Notes

Good morning [redacted],

Further to your recent discussions with my colleague [redacted], we are preparing scoping notes for your review for the three school proposals (Whitmore, Bro Morgannwg and Pencoedtre). [redacted] is away on annual leave and we are progressing this work in his absence and thought it would be useful to circulate our email addresses.

As agreed we will prepare a robust scope for each site which will hopefully reduce the consultation time required and minimise the amount of officer input needed.

I aim to get the scoping notes to you within the next couple of days. I hope you find this satisfactory.

Kind Regards,

[redacted]

[redacted]

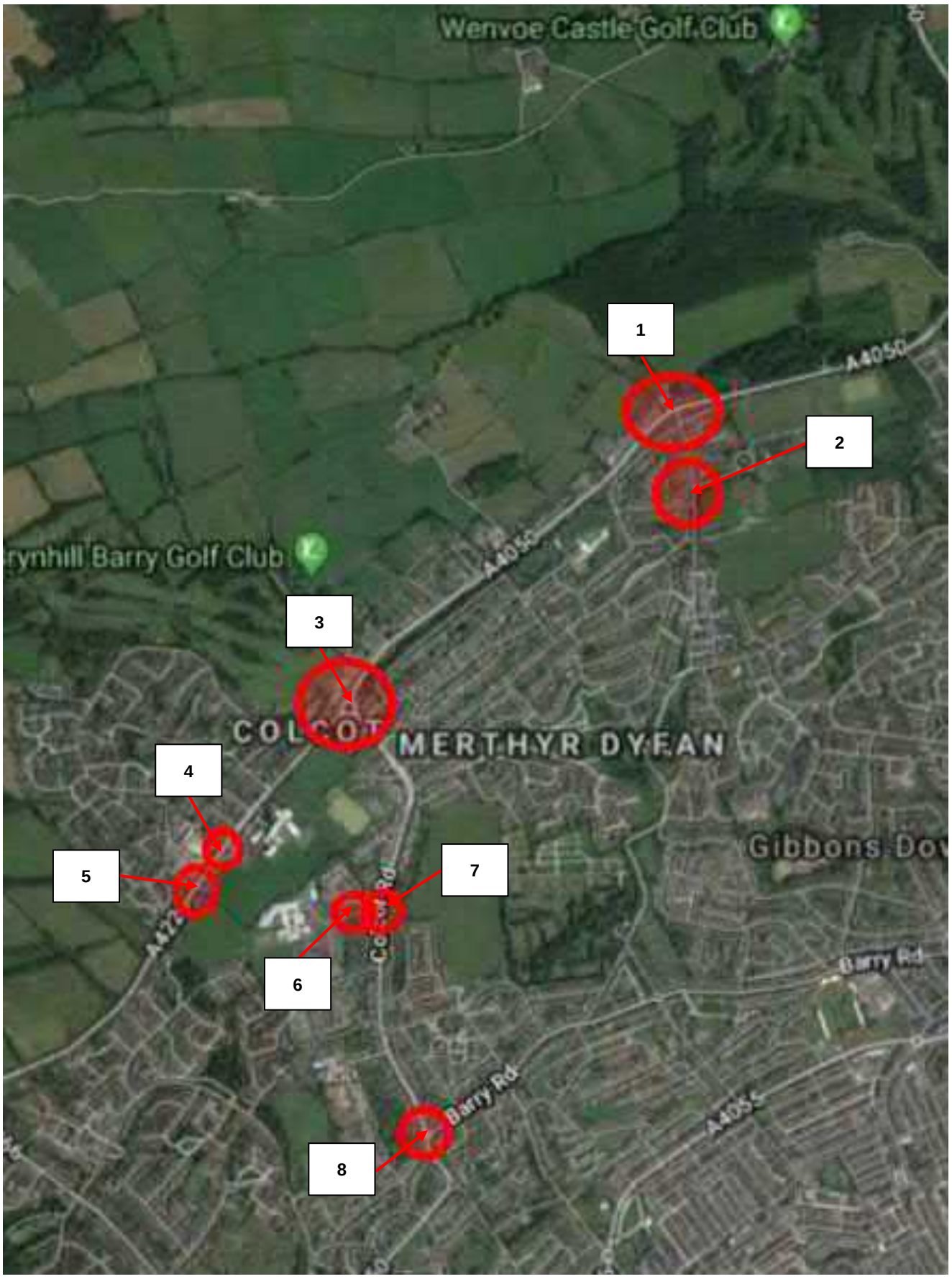
[redacted]

[redacted]

Appendix C

Traffic Survey Locations, June 2018

Traffic Survey Locations – Barry, Vale of Glamorgan



Junction Turning Count and Queue Length Surveys – Survey Specification

Locations:

1. A4050 Port Road E / Merthyr Dyfan Road (signal-controlled junction)
2. Merthyr Dyfan Road / Ysgol Gyfun Bryn Hafren School (priority junction with ghost island right-turn lane)
3. A4050 Port Road E / A4226 Port Road W / A4050 Colcot Road (roundabout junction)
4. A4226 Port Road W / Barry Comprehensive School access in only (priority junction)
5. A4226 Port Road W / Barry Comprehensive School exit / Sterling Road (signal-controlled junction)
6. Internal access road serving Hospital / Internal access road serving Ysgol Gymraeg Bro Morgannwg (priority junction)
7. A4050 Colcot Road / Access road to school and hospital (signal-controlled junction)
8. A4050 Colcot Road / Barry Road (roundabout junction)

Date: Undertaken on Wednesday 27th June 2018.

Duration: 07:00–10:00 and 14:00–18:00.

Data to be recorded:

- Classified turning counts, with data split into 15 minute intervals (including a breakdown for vehicle types).
- Queue lengths, recorded during 5 minute intervals (the maximum queue during each interval).

Davies, Matthew J

From: Cox, Kirsty
Sent: 10 July 2019 11:33
To: Howells, Lee M
Cc: Godsall, Tony (Agency); Robinson, Ian; Clogg, Michael T; Williams, Kelly A; Panagi, Spiro
Subject: RE: Pencoedtre High School - Transport Assessment Scoping Note

Lee,

Many thanks for your email, we appreciate the swift response on the Scoping Note and your input into the TA that will accompany this scheme. We will review this input and the requests and respond to each in further detail with the final TA document. However, we thought it would be useful to discuss the content at this stage and advise that there is unlikely to be a requirement for further assessment work or mitigation proposals. This is based on the development proposals including a maximum of 1,250 pupils in a new facility at the same location against a background of an existing permitted pupil capacity of 1,331. Therefore, overall, there will be less trips generated by the proposals than that which is currently permitted as part of the existing school. In the local network, there will also be further benefits in reduction in permitted traffic generation, following any successful permission of the Whitmore High School planning proposals.

I hope that the above is useful and helps set out the proposals in more detail, we look forward to submitting our TA for your review at PAC stage. We would be pleased to answer any queries or address any concerns in the interim.

Kind Regards,

Kirsty

Kirsty

Kirsty Cox BSc (Hons) MCIHT
Principal Consultant, Transportation
M +44 (0) 7741 858031
kirsty.cox@aecom.com

I currently work part-time (Monday – Thursday)

From: Howells, Lee M <LMHowells@valeofglamorgan.gov.uk>
Sent: 05 July 2019 09:50
To: Cox, Kirsty <Kirsty.Cox@aecom.com>
Cc: Godsall, Tony (Agency) <tgodsall@valeofglamorgan.gov.uk>; Robinson, Ian <IRobinson@valeofglamorgan.gov.uk>; Clogg, Michael T <MTClogg@valeofglamorgan.gov.uk>; Williams, Kelly A <kawilliams@valeofglamorgan.gov.uk>
Subject: RE: Pencoedtre High School - Transport Assessment Scoping Note

Kirsty,

Further to your email below, please find below our initial thoughts

- The report only provides for manual classified counts for extended weekday peak hour traffic (07:00-10:00hrs and 14:00-18:00hrs), which are only limited to the junctions shown in Appendix C. Do you think that this should also extend to the roundabout junctions at Waycock Cross, Pencoedtre

Lane and the BDLR? Also, would you expect to see 12 hour manual counts (for modelling purposes), as well as ATC data on the links (over a 7 day period) to validate the model?

- To ensure the junctions operate effectively and efficiently when the new school is opened, perhaps pedestrian surveys should be carried out at this stage to determine whether those junctions require alterations (new ped/cycle facilities or are existing ones still fit for purpose), especially signalised junctions where timings made need to be amended, MOVA included or upgraded to include cycle facilities?
- The report includes a review of PIC data "covering an appropriate study area". Do you know what area was discussed in the scooping meeting? I would suggest that the highway network for the traffic survey study area should replicate that for PICs?
- A question was posed in Tony's email to Kirsty on the 25th September 2018, "Is speeding an issue within the vicinity "which would discourage walking and cycling". The response was "site observations will be undertaken as part of the TA with findings reported". This really reinforces my suggestion that ATCs should be obtained.
- The issue over parking and TROs - Review outcome from "full walkover site audit".
- Review existing pedestrian /cycle facilities leading to (offsite) and within the development. The developer will need to identify an additional improvements inclusive of offsite works to comply with Council Policies i.e "The Wellbeing of Future Generations Act " and "The Active Travel (Wales) Act 2013 makes walking and cycling the preferred option for shorter journeys, particularly everyday journeys, such as to and from a workplace or education establishment, or in order to access health, leisure or other services or facilities. The Active Travel Act requires local authorities to produce Integrated Network Maps, identifying the walking and cycling routes required to create fully integrated networks for walking and cycling to access work, education, services and facilities."
- Requirement for a robust Travel Plan
- Coach sizes (swept paths) to be based on 15m coaches
- Refuse sizes (swept paths) to be based on 11.22m coaches

Kind Regards

Lee
Lee M Howells Engineering Manager Highway Development & Traffic

From: Cox, Kirsty [mailto:Kirsty.Cox@aecom.com]
Sent: 02 July 2019 14:15
To: Howells, Lee M
Cc: Godsall, Tony (Agency); Panagi, Spiro; Davies, Matthew J
Subject: Pencoedtre High School - Transport Assessment Scoping Note

Hello Lee,

We write further to our ongoing involvement with the 21st Century Schools in the Vale of Glamorgan. We started Scoping discussions with you on three schools in September last year, these included Ysgol Gymraeg Bro Morgannwg and Whitmore and Pencoedtre High schools. The first two are now within the planning system, while the Pencoedtre scheme was held back to further develop the proposals. We are now instructed to complete and submit Transport Planning inputs to accompany a planning application and are approaching a PAC submission.

The Scoping process was previously completed on the basis of a proposed redevelopment of part of the Pencoedtre facility, this has now evolved to a full new school development. We have updated the previous Scoping Note to provide the up to date position on the development details and have retained the proposed methodology. We attach the revised Scoping Note and copies of the correspondence between us to date and hope that this approach will save you and your team some time in your review and response.

It would be greatly appreciated if you provide your response at your earliest convenience and before Friday 12th July to ensure any additional scoping comments are included within the final TA and TP submission. If you could also copy in my colleagues Spiro and Matthew when you do so.

We look forward to hearing from you.

Kind Regards,

Kirsty

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Appendix 1.2

Vale of Glamorgan Council Car Park Risk Assessment (November 2015)

RISK ASSESSMENT

Location/Premises/School: Bryn Hafren	**Date: 25/11/2015**
Completed by: Tiffany Barker, Lewis Hort	**Review date: 24/11/2016**
Activity / Area / Description: School car park and bus drop off/pick up point. Pupils arriving to and leaving from school in the morning and afternoon a high volume of traffic due to parents dropping children off within the school grounds.	

What are the hazards?	Who might be harmed and how?	What are you already doing?	What further action is necessary?	Action by whom	Action by when	Date action completed
Traffic – on site	Teachers, Pupils, Parents, Bus drivers, Visitors. Impact with cars /buses. Cars using excessive speed along approach road into school.	One way system currently implemented and bus parking bays allocated. Adequate external lighting provided on site. Staff members do patrol area at busy times.	Designated patrols during arrival and leaving of pupils. Hi-Viz vests to be provided to members of staff on patrol. Speed limit signs on entry route to park and in car park (roundabout). Pedestrian crossing to be painted on area leading from school to footpath. Speed bumps on entry route to school.			
Car park/bus drop off/pick up area. High volume of pupils in morning	Teachers, Pupils, Parents, Bus drivers, Visitors. Impact with cars	One way system currently implemented and bus parking bays allocated. Adequate external lighting provided	Designated patrols during arrival and leaving of pupils. Hi-Viz vests to be provided to members of staff on patrol.			

when school begins and in afternoon on leaving. Parents picking up pupils and blocking buses causing high volume of traffic. Up to five buses in car park during drop off in morning and pick up in afternoon. High volume of Pupils and traffic.	/buses	on site. Staff members do patrol area at busy times. Some pupils leave at staggered times – however, majority of pupils leave at the same time.	Pedestrian crossing to be painted on area leading from school to footpath. Cordon off entry to school to deny access to parents during busy times i.e. in the morning and afternoon.			

Other recommendation to consider:

- Restrict parking in car park to teachers and pupils only.
- Allow only buses into car park during designated times.
- Reroute top end of footpath on roundabout to allow pupils to cross onto pavement rather than grass bank.
- Increase number of bus parking bays. This could be done by turning half of the roundabout into bus parking bays.

It is advised that the vale transport department be contacted to carry out an audit of the site to ascertain whether or not any of the above traffic calming measures would be feasible and whether or not additional bus parking bays can be installed on the roundabout.

As an immediate measure to reduce the amount of traffic within the school grounds, during busy time's access to parents should be denied in order to reduce the amount of traffic coming onto the school grounds. This can be achieved by cordoning off the front entrance with cones and a teacher based there to ensure no access is granted other than to school buses.
If this is to be implemented a letter should be sent to all parents of pupils informing them that no access will be granted to the school during the busy times i.e. morning and afternoon.

Appendix 3.1

Proposed Masterplan

LANDSCAPE SITE PLAN KEY

Site Boundary

HARD LANDSCAPE

Existing Hard Standing
To be retained and made good (if required)

Proposed Vehicle Grade Permeable & Non-Permeable Asphalt Paving
Vehicle Grade Asphalt Paving to access road-To match existing

Proposed Permeable Pedestrian Grade Concrete Asphalt Paving To MUGA area

Proposed Concrete finish Bus Bays

Proposed Permeable Concrete block Paving
Pedestrian Grade Permeable Paving (Fire and Services access requirement to be confirmed)

Proposed Permeable Buff colour Asphalt

Proposed Buff colour Asphalt

Proposed mulch
To Allotment area

Proposed External Steps
With Handrail

Proposed Blister Tactile Paving
To Crossing

Proposed Tactile Paving
To top and bottom of Steps

SOFT LANDSCAPE

Existing tree
To be retained.

Existing tree
To be removed.

Existing Soft Landscape
To be retained and made good (if required)

Existing Sport Pitch with New Line Marker
Turf surface to be refurbished or made good (if required).

Proposed Sport Pitch with New Line Marker
Proposed hard wearing sport turf.

Proposed Embankment & Shrub Planting
The embankment to steep slope will be tufted with a mix of native shrubs and wildflowers providing biodiversity and low maintenance

Proposed ornamental planting
Low maintenance ornamental planting and grasses to school entrance and rain garden for aesthetic value.

Proposed multi-purpose lawn area

Proposed Biodiversity Habitat Areas
Biodiversity Native Shrub & Wildflower meadow planting with low maintenance.

Proposed All Weather Hockey Pitch

FENCING

Existing Boundary Fences
To be retained, where construction access is required _ these sections will be made good.

Proposed Fence
Refer to Hard Landscape Strategy Drawings for Details

FURNITURES

Outdoor Dining Tables and Benches

Proposed Benches

Proposed bins

Proposed sail shade
Location to be confirmed

Proposed table tenis

Notes

Check all dimensions on site. Do not scale from this drawing
Report any discrepancies and omissions to HLM Architects

Rev	Sbty	Description	Date	By	Chk
P08	PL	UPDATED ISSUE FOR PLANNING	19.09.2019	HV	BT
P07	PL	ISSUE FOR PLANNING	18.09.2019	HV	BT
P06	S3	PAC ISSUE WITH BUS SET DOWN ADDED	15.08.2019	HV	BT
P05	S3	PAC ISSUE WITH BUS SET DOWN ADDED	15.08.2019	HV	BT
P04	S1	MUGA SIZE & CYCLE LOCATION CHANGE UPDATED ISSUE FOR CO-ORDINATION	07.08.2019	BT	AS
P03	S3	REVISED ISSUE FOR COMMENT	22.07.2019	BT	MT
P02	S3	REVISED ISSUE FOR COMMENT	11.07.2019	HV	BT
P01	S3	PRELIMINARY ISSUE FOR COMMENT	04.07.2019	BT	MT

Revisions | Suitability

Project: PL - FOR PLANNING

15-1050-01 PENCOEDTRE HIGH SCHOOL

PENCOEDTRE

Client

BOUYGUES UK

VALE of GLAMORGAN BRO MORGANNWG

Title

PROPOSED MASTERPLAN

Drawing No.: PHS-HLM-SW-ZZ-GA-L-0002
Revision: P08

Scale @ A0: 1:500
Drawn: HV
Date: 19.09.2019
Checked: BT

N

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Appendix 3.2

Further evidence for a reduction in school bus provision

Introduction

The changing catchment area for Pencoedtre High School (PHS) on the opening of the new school in September 2021, will result in a reduction in the level of school bus provision. The current level of bus provision stands at four bus services, these are the S2, S10 (shared with Whitmore High School (WHS), S11 and S14 (also shared with WHS)**.** The future requirement for bus service provision will be two bus services and a mini bus (service numbers unknown at present time).

At a meeting on Wednesday 21st August 2019, the Vale of Glamorgan (VoG), in its role as Local Highway Authority (LHA), requested further justification and evidence for the forecast reduction in school bus provision. This note has been prepared as a result of that request and aims to provide the evidence and justification required by the LHA.

Background

The schools formerly known as Bryn Hafren and Barry Comprehensive Schools previously provided single-sex education in Barry up until September 2018. These schools shared a single catchment area that stretched from Wenvoe to Rhoose. This meant that a number of pupils lived more than 3 miles from the schools. For Bryn Hafren Comprehensive School, pupils attending from Culverhouse Cross, Barry Island, The Knap and Rhoose were entitled to free transport as they lived more than 3 miles from the school.

However, in September 2018 Bryn Hafren and Barry Comprehensive Schools were replaced by two co-educational schools, PHS and WHS, respectively. As these schools now cater for mixed-sex education, each school has its own new and individual catchment area. This has reduced the numbers of pupils entitled to free school transport. Pupils living at Barry Island and The Knap are now in the catchment area for WHS, and therefore not entitled to free transport to PHS. Pupils attending from the Culverhouse Cross area are still entitled, however, there are no current pupils on roll from this area.

The number of pupils entitled to free transport is expected to reduce significantly by September 2021 as transitional arrangements for ongoing transport entitlement only apply to pupils who entered year 11 in September 2018 and pupils in lower years were asked to re-apply for the 2018/19 intake. These pupils will have progressed through the school and will have left sixth form by September 2021.

Current Situation

There are currently 28 pupils entitled to free school transport to PHS. From September 2019, the current academic year, these are in the following year groups:

- 13 pupils in year 13;
- 13 pupils in year 12; and
- Two pupils in year 11.

These 28 pupils are currently using the following services:

- S11 – 13 pupils;
- S14 – 4 pupils;
- S2 – 9 pupils;

- Parental expense – 1 pupil; and
- External bus 94/96 – 1 pupil.

Therefore, from September 2021, 26 of the 28 pupils will have left the school (pupils in numbers 1 and 2 above). The two pupils in year 11 (in September 2019) will be entering year 13 (their final year) in September 2021, if they choose to continue their studies at sixth form level.
Future Situation

From September 2022, there will be no pupils entitled to free school transport at PHS due to the catchment changes brought into force from September 2018. Whilst not expected to be significant in the number, the only exceptions to this will be:

- If a pupil applies from the Culverhouse Cross area which is more than 3 miles from the school; and
- If pupils are allocated a place at PHS due to their catchment school being full.

Therefore, in terms of new pupils attending PHS school, it isn't anticipated that any will be entitled to free school transport due to the change in catchment area. The S2, S11 and S14 services should no longer be required at PHS as these services serve areas that are no longer in the school's catchment areas (Barry Island, Rhoose and Barry West End respectively). This reduces the number of buses to one as the S10 is a fare paying service that picks up pupils from within the PHS catchment area.

It is difficult to predict future eligibility due to a number of unknowns. One instance may be if a parent from within the WHS catchment area applied for a place for their child and were refused due to WHS being full. They may get offered a place at the nearest available school, PHS, and would be entitled to free transport if they lived more than three miles away. Therefore, the additional coach and minibus bays provide flexibility for additional services in these situations.

<u>Bus Service Provision During Construction and on Opening of New School</u>

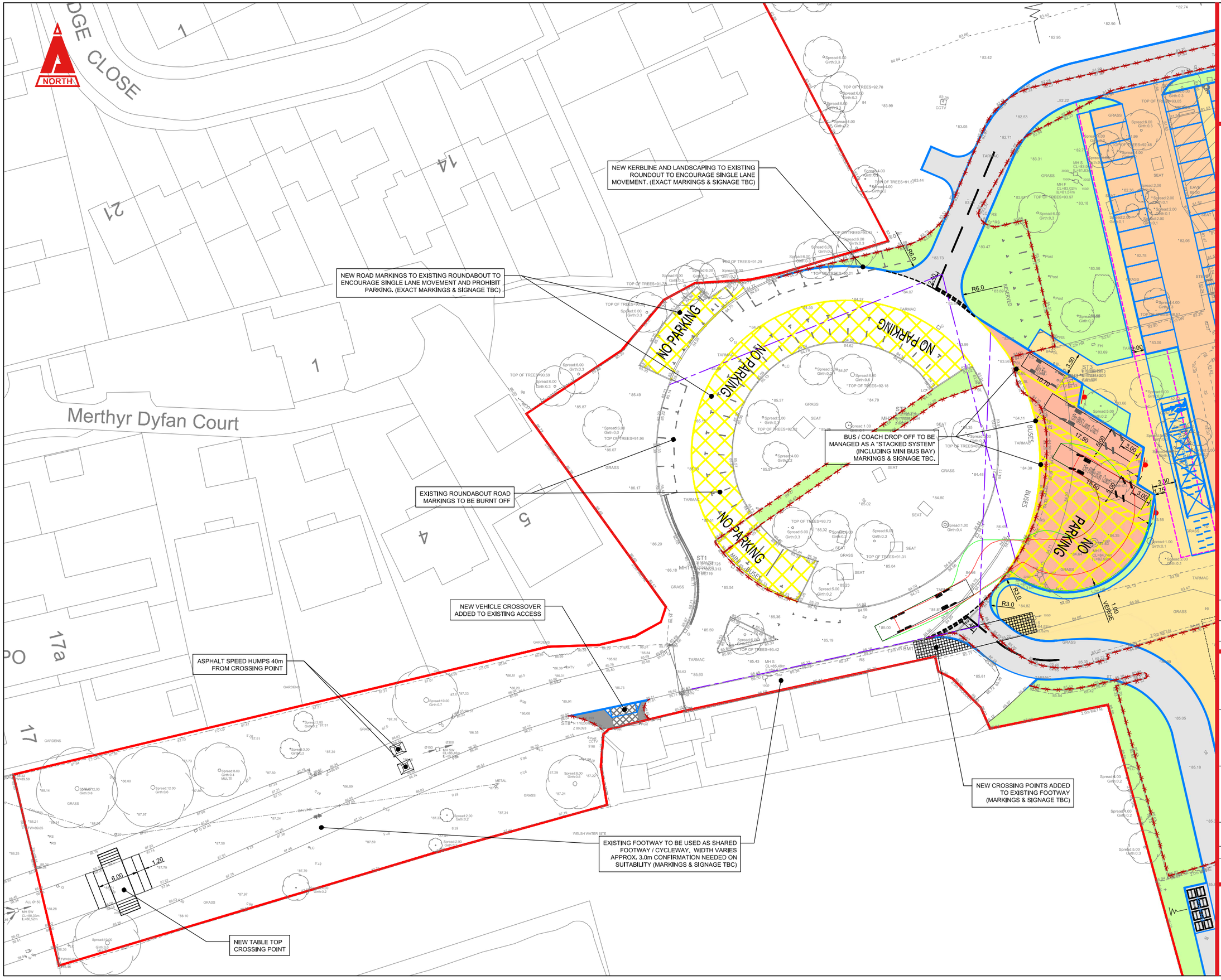
The following section sets out the timeline in order to understand how the transition from the current level of bus service provision will change through the proposed construction period and what the requirement will be upon the proposed new school opening date.

In current forecasts and providing that a successful approval of the planning application is secured by the end of December 2019, construction of the new school will commence in February 2020 over a period of 19months due for completion at the end of August 2021. The new school building is due for occupation in October 2021. During this time there will be 28 existing pupils eligible for school bus provision, with only two remaining upon school opening in the latter end of 2021.
The second phase of the project will then see the demolition of the existing school building and the completion of the external works, overall completion of the project is scheduled for completion in August 2022.

It is therefore concluded that there is unlikely to be a remaining legacy requirement for further bus provision at the time of opening the new school development. In this set of reasonable assumptions, the proposed bus parking and manoeuvring infrastructure proposals are considered appropriate to the school's requirements.

Appendix 3.3

Access Arrangements



KEY:

- NEW ROAD CONSTRUCTION (TBC)
- NEW PEDESTRIAN AREA (TBC)
- NEW LANDSCAPING (TBC)
- NEW CAR PARK AREA (TBC)
- NEW BUS DROP OFF AREA (TBC)
- NEW CROSSING POINTS (TBC)
- EXISTING KERBLINE TO BE REMOVED
- NEW PROPOSED LAYOUT
- ARCHITECTS PROPOSED CAR PARK KERBLINE
- SIGN "NO REVERSING EXIT IN FORWARD GEAR"
- 2.4m x 43m JUNCTION VISIBILITY SPLAY

Rev.	Description	By	Chk	App
P02	REVISED IN ACCORDANCE WITH VOG COMMENTS 21/08/19 AND DTM COMMENTS 29/08/19.	SJ	CP	GC
		16/08/19		
P01	FIRST ISSUE FOR COMMENT	SJ	CP	GC
		16/08/19		

Client: BOUYGUES CONSTRUCTION / VALE of GLAMORGAN BRO MORGANNWG

Project:
PENCOEDTRE HIGH SCHOOL (CC1941)

Drawing Title:
BUS & COACH DROP OFF: GENEARL ARRANGEMENT

Drawing No.
PHS CAM SW XX GA C 1163

Project No. Org. Vol. Level Type Dis. Number

Suitability Status:	Scale @A1:	Rev:
S3 PRELIMINARY	1:250	P02

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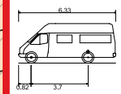
Appendix 3.4

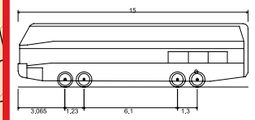
Swept Path Analysis

NORTH



Mini Bus

Overall Length	6.330m
Overall Width	2.192m
Overall Body Height	2.601m
Min Body Ground Clearance	0.374m
Track Width	2.192m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.450m



15m 6WS Luxury Coach

Overall Length	15.000m
Overall Width	2.500m
Overall Body Height	4.157m
Min Body Ground Clearance	0.397m
Track Width	2.500m
Lock to lock time	5.00s
Wall to Wall Turning Radius	12.490m

Rev.	Description	By	Chk	App
P03	REVISED IN ACCORDANCE WITH VOG COMMENTS 21/08/19 AND DTM COMMENTS 29/08/19.	SJ	CP	GC
		10/09/19		
P02	NEW BUS & COACH DROP OFF PROPOSALS SHOWN. VEHICLE TRACKING AMENDED TO SUIT.	SJ	CP	GC
		16/08/19		
P01	FIRST ISSUE FOR COMMENT	SJ	CP	GC
		24/07/19		

Client: BOUYGUES CONSTRUCTION / VALE of GLAMORGAN BRO MORGANNWG

Project:
PENCOEDTRE HIGH SCHOOL (CC1941)

Drawing Title:
BUS & COACH DROP OFF: VEHICLE TRACKING

Drawing No.
PHS CAM SW XX GA C 1160

Project No. Org. Vol. Level Type Dis. Number

Suitability Status:	Scale @A1:	Rev:
S3 PRELIMINARY	1:200	P03

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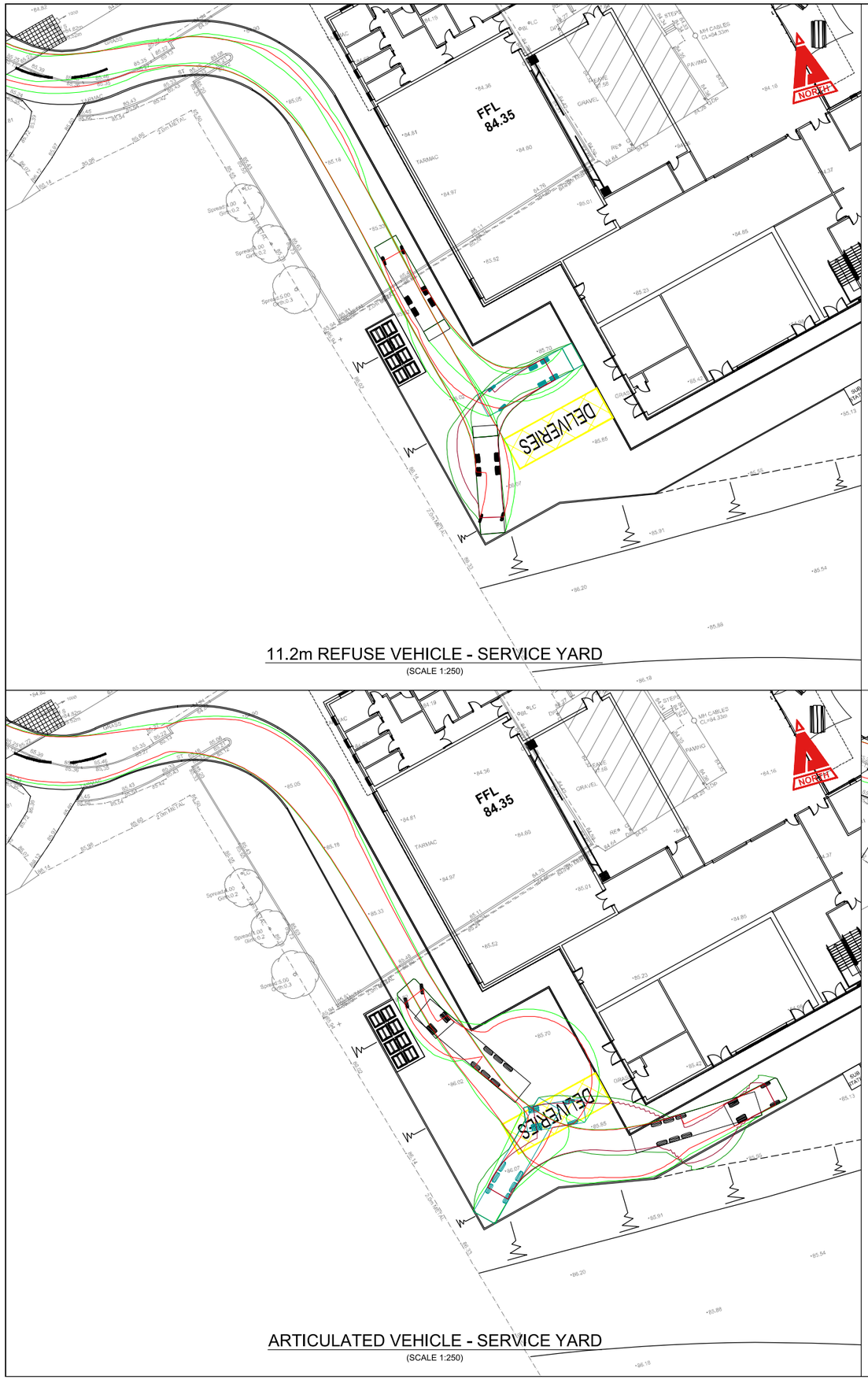
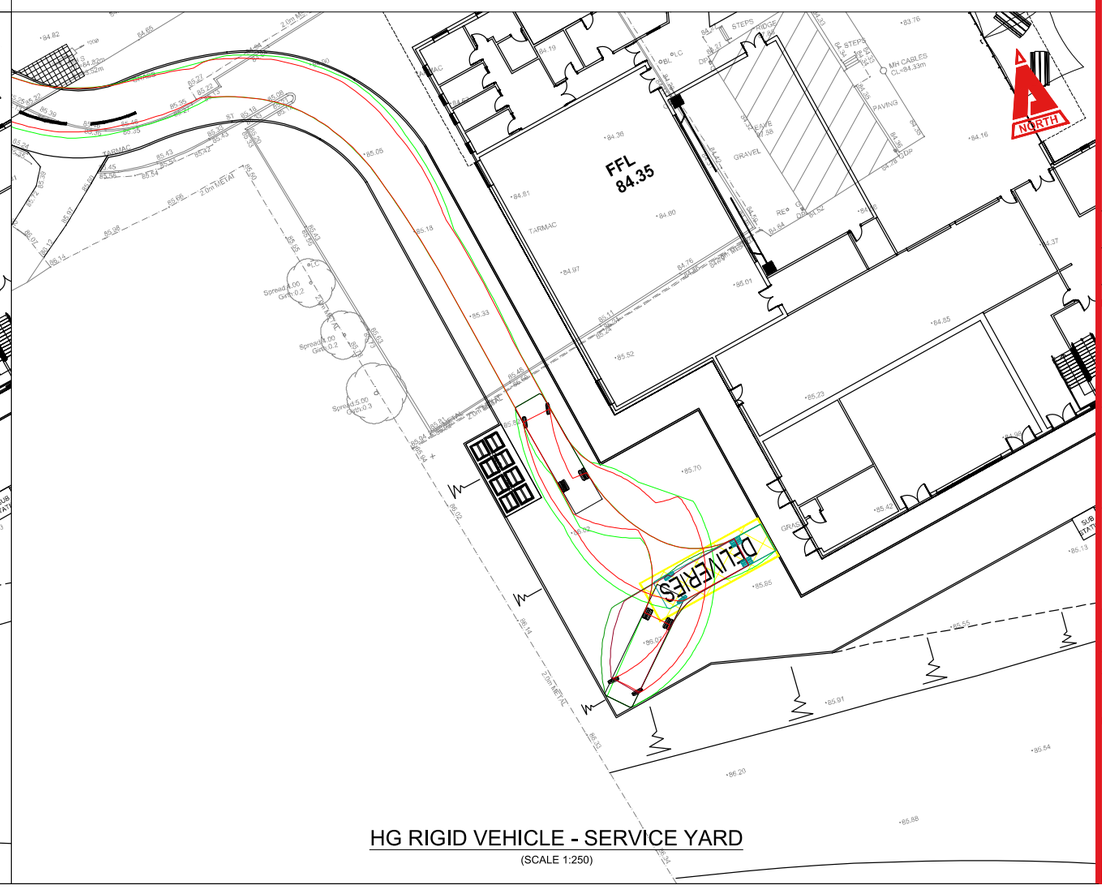


11.2m REFUSE VEHICLE - SERVICE YARD

(SCALE 1:250)

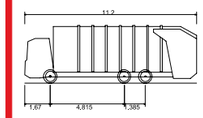
ARTICULATED VEHICLE - SERVICE YARD

(SCALE 1:250)



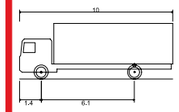
HG RIGID VEHICLE - SERVICE YARD

(SCALE 1:250)



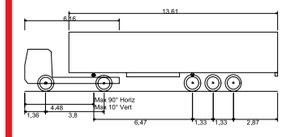
Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)

Overall Length	11.200m
Overall Width	2.530m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.500m



FTA Design HG Rigid Vehicle (1998)

Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	11.000m



FTA Design Articulated Vehicle (1998)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.550m

Rev.	Description	By	Chk	App
P02	REVISED IN ACCORDANCE WITH VOG COMMENTS 21/08/19 AND DTM COMMENTS 29/08/19. DRAWING TITLE AMENDED.	SJ	CP	GC
		10/09/19		
P01	FIRST ISSUE FOR COMMENT	SJ	CP	GC
		24/07/19		

Client: BOUYGUES CONSTRUCTION

Project:

PENCOEDTRE HIGH SCHOOL (CC1941)

Drawing Title:

VEHICLE TRACKING: SERVICE YARD / DELIVERIES

Drawing No.

PHS CAM SW XX GA C 1161

Project No. Org. Vol. Level Type Dis. Number

Suitability Status:	Scale @A1:	Rev:
S3 PRELIMINARY	AS SHOWN	P02

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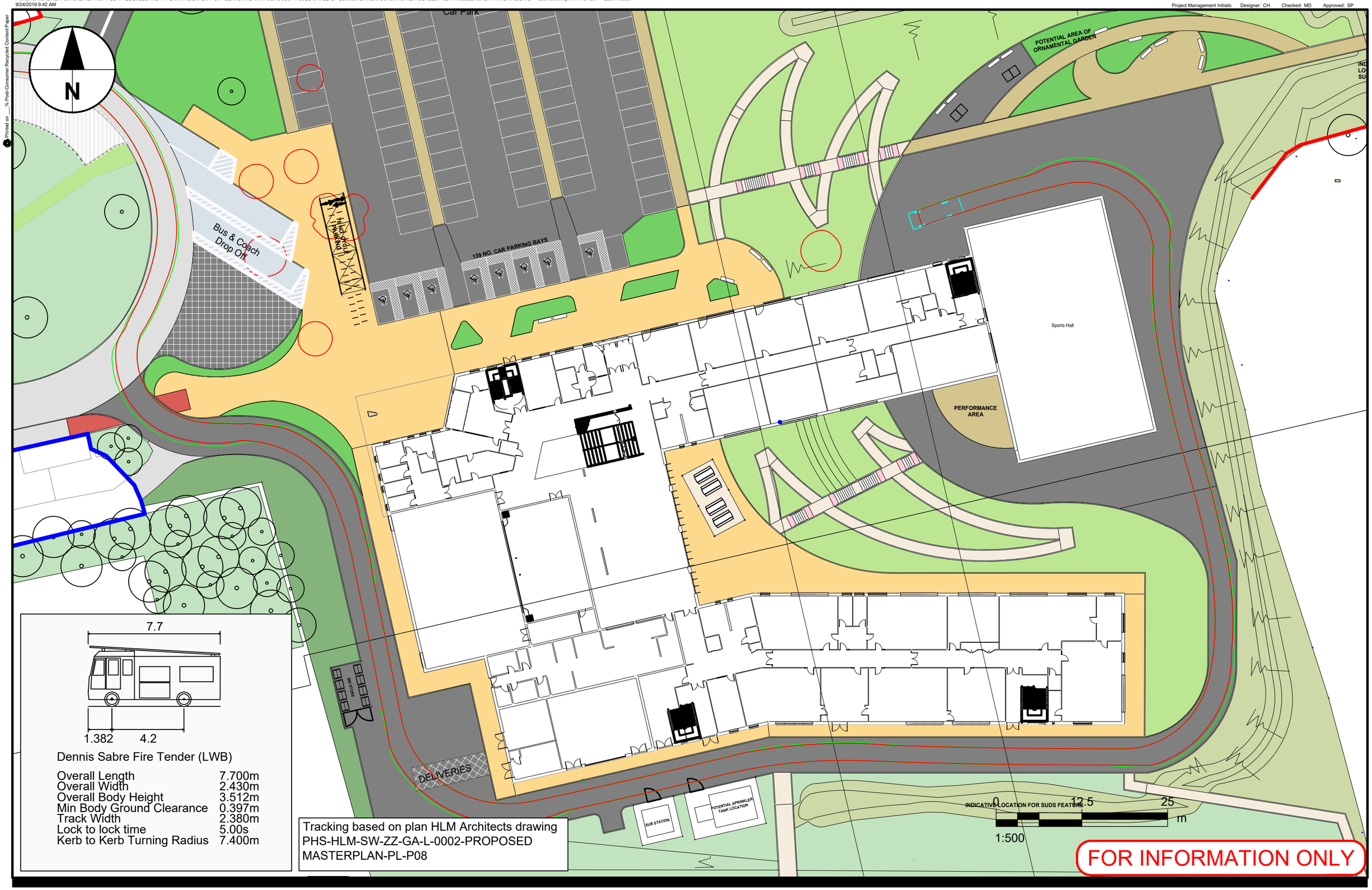
Filename: \\UKBRI2FP001\UKBRI2FP001-VOL1TP\$DEVELOPMENT PLANNING\CARDIFF OFFICE WORK\BARRY SCHOOLS PROJECT, VALE OF GLAMORGAN\LAYOUTS\PHS NEW DEVELOPMENT\15.08.2019\ACM-TRACKING.DWG Last saved by: HATTONCM Last Plotted: 9/24/2019 9:42 AM

Project Management Initials: Designer: CH Checked: MD Approved: SP



Pencoedtre High School

Swept Path Analysis

Fire Tender

AECOM

PHS-TR-005.1

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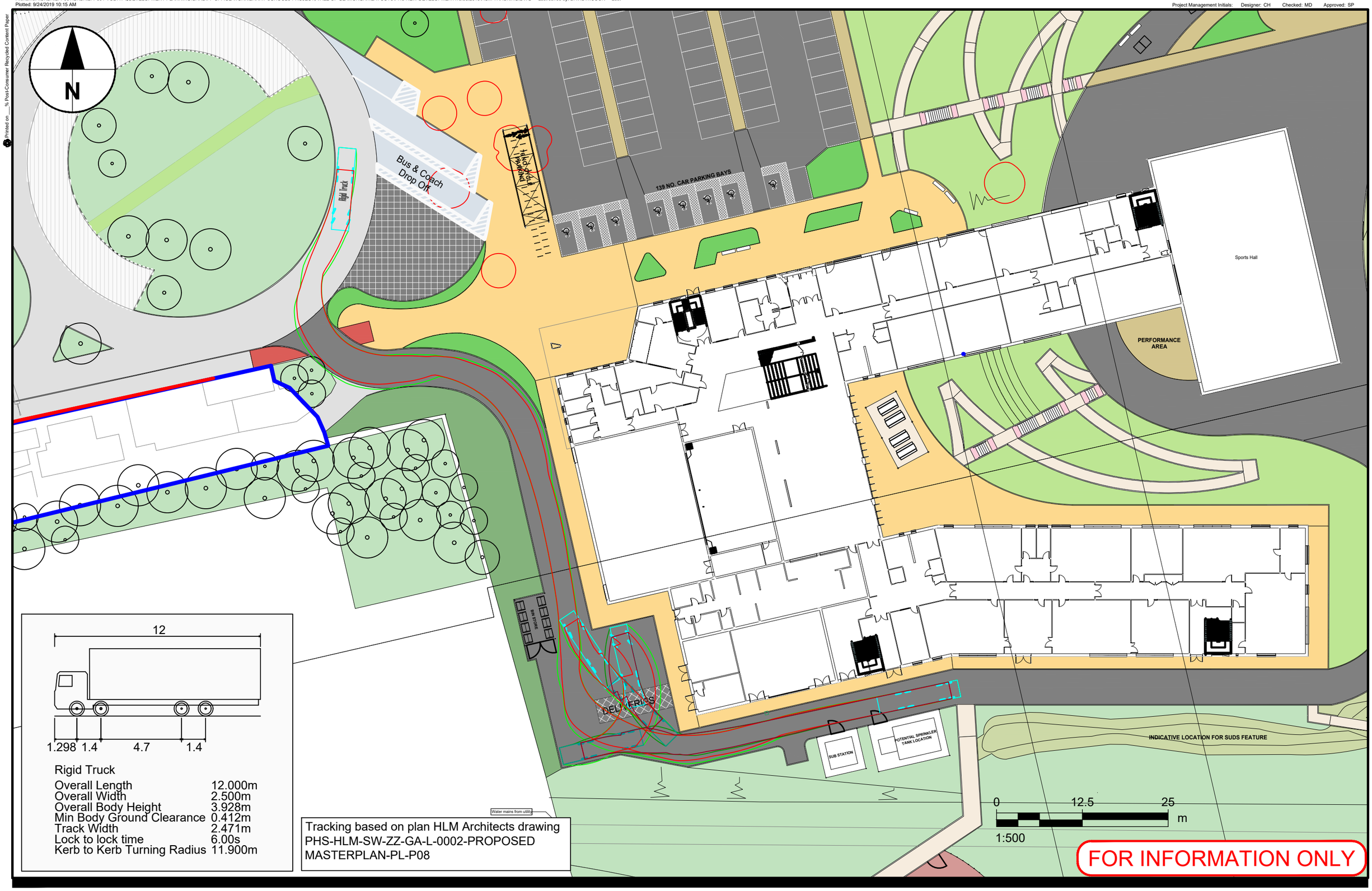

Rigid Truck

Overall Length	12.000m
Overall Width	2.500m
Overall Body Height	3.928m
Min Body Ground Clearance	0.412m
Track Width	2.471m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	11.900m

Tracking based on plan HLM Architects drawing PHS-HLM-SW-ZZ-GA-L-0002-PROPOSED MASTERPLAN-PL-P08

FOR INFORMATION ONLY

Pencoedtre High School

Swept Path Analysis

Service Vehicle to Sprinkler Tank

AECOM

PHS-TR-003-A

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